TOSHIBA

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SERVICE MANUAL

COLOUR TELEVISION

C80 Chassis

2181TB, 2180TD

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CHAPTER 1 GENERAL ADJUSTMENTS

SAFETY INSTRUCTIONS

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" INSTRUCTIONS BELOW.

X-RAY RADIATION PRECAUTION

1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is (A) kV at zero beam current (minimum brightness) under a (C) V AC power source. The high voltage must not, under any circumstances, exceed (B) kV.

   Refer to table-1 for high voltage (A), (B) & AC voltage (C) (See SETTING & ADJUSTING DATA on page 13)

   Each time a receiver requires servicing, the high voltage should be checked following the HIGH VOLTAGE CHECK procedure in this manual. It is recommended that the reading of the high voltage be recorded as a part of the service record. It is important to use an accurate and reliable high voltage meter.
2. The only source of X-RAY RADIATION in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.
3. Some part in this receiver have special safety-related characteristics for X-RAY RADIATION protection. For continued safety, parts replacement should be undertaken only after referring to the PRODUCT SAFETY NOTICE below.

SAFETY PRECAUTION

WARNING : Service should not be attempted by anyone unfamiliar with the necessary precautions on this receiver. The following are the necessary precautions to be observed before servicing this chassis.

1. An isolation transformer should be connected in the power line between the receiver and the AC line before any service is performed on the receiver.
2. Always discharge the picture tube anode to the CRT conductive coating before handling the picture tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled. Use shatter proof goggles and keep picture tube away from the unprotected body while handling.
3. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as; nonmetallic control knobs, insulating covers, shields, isolation resistor-capacitor network etc.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the international hazard symbols on the schematic diagram and the parts list.
Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, X-ray radiation or other hazards.

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 3 OF THIS MANUAL.

SET-UP ADJUSTMENT

■ The following adjustments should be made when a complete realignment is required or a new picture tube is installed. Perform the adjustments in order as follows :

1. Color Purity
2. Convergence
3. White Balance

Note: The PURITY/CONVERGENCE MAGNET assembly and rubber wedges need mechanical positioning. Refer to figure 1.

* There are no adjustment of purity and convergence in some picture tube (Unified with purity magnet)

COLOR PURITY ADJUSTMENT

NOTE : Before attempting any purity adjustments, the receiver should be operated for at least fifteen minutes.

1. Demagnetize the picture tube and cabinet using a degaussing coil.
2. Set the brightness and contrast to maximum.
3. Use a green raster from among the built-in test signals.
4. Loosen the clamp screw holding the yoke and slide the yoke backward or forward to provide vertical green belt (zone) in the picture screen.
5. Remove the Rubber Wedges.
6. Rotate and spread the tabs of the purity magnet (See figure 2.) around the neck of the picture tube until the green belt is in the center of the screen. At the same time, enter the raster vertically.
7. Slowly move the yoke forward or backward until a uniform green screen is obtained. Tighten the clamp screw of the yoke temporarily.
8. Check the purity of the red and blue raster.

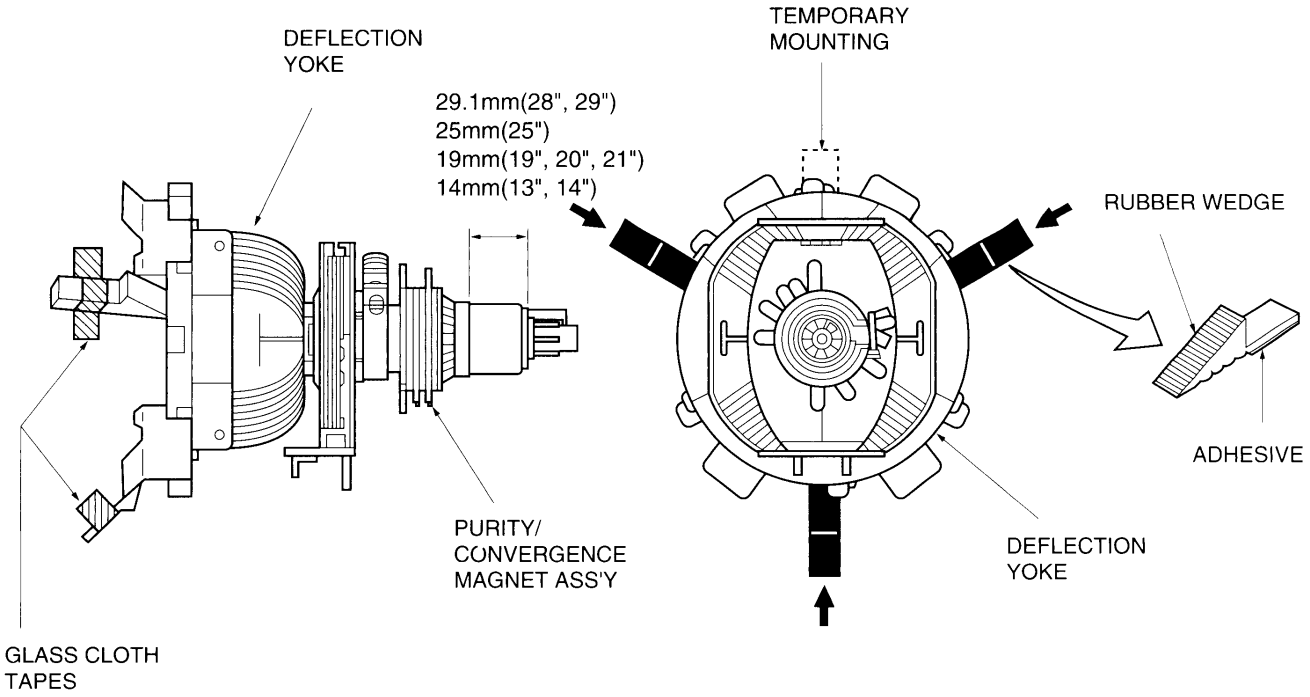


Figure 1.

CONVERGENCE ADJUSTMENTS

NOTE: Before attempting any convergence adjustments, the receiver should be operated for at least fifteen minutes.

■ CENTER CONVERGENCE ADJUSTMENT

1. Use the cross-dot pattern from among the built-in test signals.
2. Set the brightness and contrast for well defined pattern.
3. Adjust two tabs of the 4-Pole Magnets to change the angle between them (See figure 2.) and superimpose red and blue vertical lines in the center area of the picture screen.
4. Turn the both tabs at the same time keeping the angle constant to superimpose red and blue horizontal lines at the center of the screen.
5. Adjust two tabs of 6-Pole Magnets to superimpose red/blue line and green one. Adjusting the angle affects the vertical lines and rotating both magnets affects the horizontal lines.
6. Repeat adjustments 3, 4, 5 keeping in mind red, green and blue movement, because 4-Pole Magnets and 6-Pole Magnets have mutual interaction and make dot movement complex.

■ CIRCUMFERENCE CONVERGENCE ADJUSTMENT

1. Loosen the clamping screw of deflection yoke slightly to allow the yoke to tilt.
2. Temporarily put a wedge as shown in figure 1. (Do not remove cover paper on adhesive part of the wedge.)
3. Tilt front of the deflection yoke up or down to obtain better convergence in circumference. (See figure 3.) Push the mounted wedge into the space between picture tube and the yoke to fix the yoke temporarily.
4. Put other wedge into bottom space and remove the cover paper to stick.
5. Tilt front of the yoke right or left to obtain better convergence in circumference. (See figure 3.)
6. Keep the yoke position and put another wedge in either upper space. Remove cover paper and stick the wedge on picture tube to fix the yoke.
7. Detach the temporarily mounted wedge and put it in another upper space. Stick it on picture tube to fix the yoke.
8. After fixing three wedges, recheck overall convergence. Tighten the screw firmly to fix the yoke and check the yoke is firm.
9. Stick three adhesive tapes on wedges as shown in figure 1.

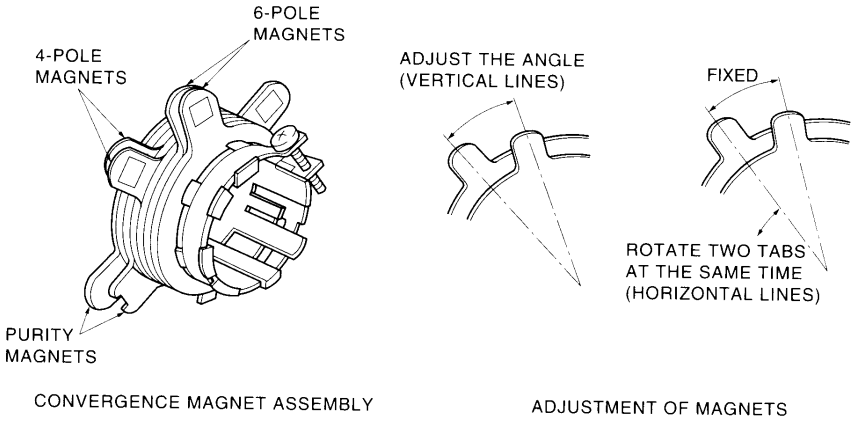
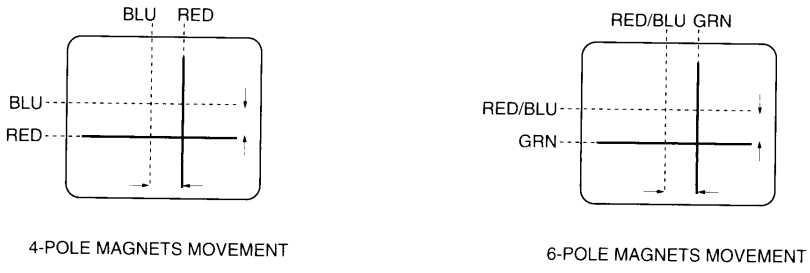


Figure 2.



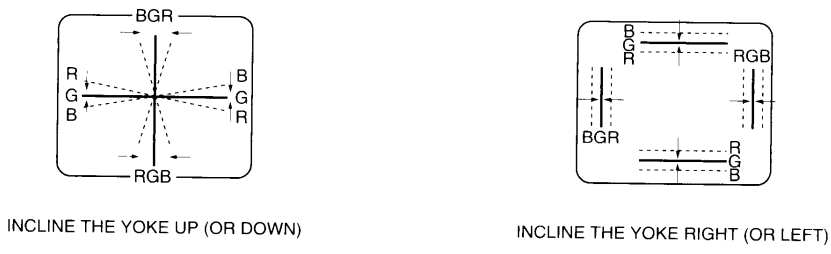
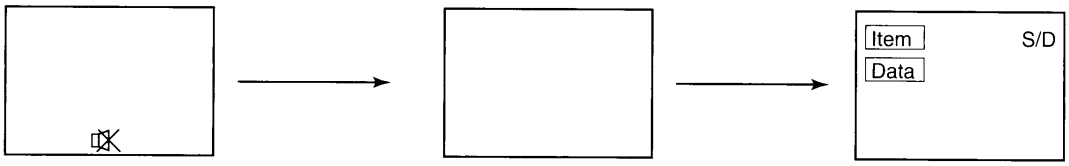


Figure 3. Dot Movement Pattern

SERVICE AND DESIGN MODE

1. ENTERING TO SERVICE AND DESIGN MODE

1) Press 🔇 button once on Remote Control.
2) Press 🔇 button again to keep pressing.
3) While pressing the 🔇 button, press Vol Down ◿ – button on TV set.



(Service mode display)

2. KEY FUNCTION IN THE SERVICE MODE

The following key entry during display of adjustment menu provides special functions.

A single horizontal line ON/OFF:	- / - - button (on Remote)
Selection of the adjustment items :	CHANNEL ▲/▼ (on TV or Remote)
Change of the data value :	VOLUME ◿ +/– (on TV or Remote)
Initialization of the memory (QA02) :	CALL + CHANNEL button on TV (▲)
I²C BUS ON/OFF :	CALL+VOL ◿ + UP.
ASM start :	CALL+VOL ◿ – DOWN.
Automatic VCO adjustment :	0 button.
"RCUT" selection :	1 button
"GCUT" selection :	2 button
"BCUT" selection :	3 button
"CNTX" (or "SCNT") selection :	4 button
"COLC" selection :	5 button– - - - Color thickness correction
"TNTC" selection :	6 button note: Displayed differently as shown below, de-
"SECAM R–Y offset" selection	7 button pending on the setting of the receiving color
"SECAM B–Y offset" selection	8 button system.
	COLP (PAL)
	COLC (NTSC)
	COLS (SECAM)

CAUTION : Never try to perform initialization unless you have changed the memory IC.

3. SELECTING THE ADJUSTING ITEMS

1) Every pressing of CHANNEL ▲ button in the service mode changes the adjustment items in the order of table-2. (▼ button for reverse order)

Refer to table-2 for preset data of adjustment mode.
(See SETTING & ADJUSTING DATA on page 13)

4. ADJUSTING THE DATA

1) Pressing of VOLUME ◿ +/– button will change the value of data in the range from 00H to FFH. The variable range depends on the adjusting item.

5. EXIT FROM SERVICE MODE

1) Pressing POWER button to turn off the TV once.

■ INITIALIZATION OF MEMORY DATA OF QA02

After replacing QA02, the following initialization is required.

1. Enter the service mode, then select any register item.
2. Press and hold the CALL button on the Remote, then press the CHANNEL ▲ button on the TV. The initialization of QA02 has been complated.
3. Check the picture carefully. If necessary, adjust any adjustment item above. Perform "Auto search Memory".

CAUTION: Never attempt to initialize the data unless QA02 has been replaced.

ELECTRICAL ADJUSTMENTS

Model C80 Series (Reference factory adjustments)

Item: [AFT],[LAFT],[RAGC],[LAGC]
The entire set (including the micro) must be powered for this alignment

For sets using the TB1231N Chroma Device the following method must be used:
UK / German Sets (1480TB,1480RB,1480RD,2181TB,2180TD) initial batches only:

1) Disconnect IF Pad, and set service and design mode.
2) Apply IF Carrier Signal at 38.9MHz/95dBuV (39.5MHz/95dBuV for UK) to the cct side of the IF pad.
3) Ensure Bus-Data is as follows:
   [AFT] = 40H
4) Attach DVM to Q501 #4 and record the voltage.
5) Using a ceramic trimmer adjust L161 until steep change of voltage between 0.2V and 4.8V (approximately).
6) Set the coil to get 2.5V (i.e. the centre of the slope).
7) Disconnect the DVM
8) Select RAGC in the service mode and adjust the RF-AGC of the tuner becomes 4V by pushing VOL ◿–/+ buttons on the remote.
9) Disconnect IF Signal Generator
10) Re-solder IF Pad.

For sets using the TB1238N Chroma Device the following method must be used as it can be adjusted automatically: (Every model after initial batches above)

UK / German Sets:

1) Disconnect IF Pad, and set to service and design mode.
2) Apply IF Carrier Signal at 38.9MHz/95dB uV (39.5MHz/95dBuV for UK) to the cct side of the IF Pad.
3) Push POS O button on Universal HHU then wait for "AFT OK" to appear on screen.
4) Select RAGC in the service mode and adjust the RF-AGC of the tuner becomes 4V by pushing VOL ◿–/+ buttons on the remote.
5) Disconnect IF Signal Generator
6) Re-solder IF Pad.

French Sets:

1) Ensure Position {n} is in the UHF Band in any system
2) Disconnect IF Pad and and select position {n}, and set service and design mode.
3) Appy IF Carrier Signal of 38.9MHz/95dbuV to the cct side of the IF pad.
4) Push POS O button on Universal HHU then wait for "AFT OK" to appear on screen.
5) Select RAGC in the service mode and adjust the RF-AGC of the tuner becomes 4V by pushing VOL ◿–/+ buttons on the remote.
6) Select LAGC in the Service mode and input the data value same as RAGC mode.
7) Disconnect IF Signal Generator and re-solder IF Pad.

[There will be no French sets using the TB1231N V/C/D IC, <u>all</u> sets will eventually use the TB1238N device. The automatic system DOES NOT require a 34.47MHz signal for SECAM L alignment, as the frequencies are generated internally.
(The Universal HHU commands are Listed on the end of this document including AFT/AGC)

Item [SCNT] NO ADJUSTMENT

Name: SUB-CONTRAST

SETTING:

Input Signal:

Measurement Place:

Adjustment Method:

Standard:

Item [BRTC]

Name: SUB-BRIGHT CENTRE

SETTING: Set user control setting to STANDARD 1

Input Signal: SUB-BRIGHT SIGNAL

Measurement Place: On Picture

Adjustment Method: Adjust the number of Black Steps visible on the picture

Standard: 4th bar from black 1.5bars

Note: Adjust last

Item [COLP] NO ADJUSTMENT

Name: SUB-COLOUR CENTRE (PAL)

SETTING:

Input Signal:

Measurement Place:

Adjustment Method:

Standard:

Item [TNTC] NO ADJUSTMENT { [TnTC] on REMOTE model }

Name: SUB-TINT CENTRE (M-NTSC Mode)
SETTING:
Input Signal:
Measurement Place:
Adjustment Method:
Standard:

Item [COLC] NO ADJUSTMENT

Name: SUB-COLOUR CENTRE (NTSC / PAL)
SETTING:
Input Signal:
Measurement Place:
Adjustment Method:
Standard:

Item [RCUT],[GCUT],[BCUT],[GDRV],[BDRV],[SCREEN VR]

Name: CUT-OFF/DRIVE ADJUST
SETTING: [RCUT],[GCUT],[BCUT] data set to 20H
[GDRV],[BDRV] data set to 40H
Set to Horizontal Line mode
Input Signal: White-Balance Signal (Reduced Dual Window Patten)
Measurement Place: On Picture
Adjustment Method:
Raise the screen VR gradually and stop in the place where the line of either R or G or B shines slightly. Set the VR position at that point.
Raise the CUT-OFF data of the two colours that did not appear first and stop when the line becomes white.
Come out of Horizontal Line mode and using white balance gear adjust [GCUT],[BCUT] in Low-Lights (4 Ft-Lbts) and [GDRV],[BDRV] in High-Lights (30 Ft-Lbts) until Standard achieved in both conditions.
Standard:

103cd/m^2(30 Ft-Lbts)	8750k +0.0075uv
17cd/m^2(4 Ft-Lbts)	8750k +0.0020uv

(Automatic may be possible, [GDRV],[BDRV] might be deleted on 14 on future models)

Item [SRY],[SBY] { [SR],[SY] on REMOTE model }

Name: SECAM R-Y/B-Y BLACK LEVEL SETTING

SETTING: COLOUR: MID

Input Signal: Two-tone White-Balance Signal

Measurement Place: On Picture

Adjustment Method:

1) Remember settings of the PAL White-Balance Adjustment on the Low-Light.
2) Select Position 2 on the selector box and confirm that the three colour boxes are visible in the lower left hand corner of the screen.
3) Adjust [SRY] for a reading of within 2 indicators on the **Green** scale with respect to the original results obtained from point (1) above
4) Adjust [SBY] for a reading of within 2 indicators on the **Blue** scale with respect to the original results obtained from point (1) above
5) Re-select position 1 on the switch box to confirm that the setting are within 2 on scale.

Standard:

Item [COLS] NO ADJUSTMENT

Name: SUB-COLOUR CENTRE (SECAM)

SETTING:

Input Signal:

Measurement Place:

Adjustment Method:

Standard:

Item [VPOS] NO ADJUSTMENT { [VP50] on REMOTE model }

Name: VERTICAL PICTURE POSITION

SETTING:

Input Signal:

Measurement Place:

Adjustment Method:

Item [HIT]
Name: VERTICAL HEIGHT ADJUSTMENT SETTING: CONTRAST=MAX BRIGHT=CENTRE COLOUR=CENTRE Input Signal: WG Philips Pattern (Do not use French SECAM) Measurement Place: On Picture Adjustment Method: Adjust the [HIT] Bus-Data until castellations just disappear from Top and Bottom of picture

Item [HOPS]
Name: HORIZONTAL PICTURE POSITION SETTING: CONTRAST=MAX BRIGHT=CENTRE COLOUR=CENTRE Input Signal: WG Philips Pattern (Do not use French SECAM) Measurement Place: On Picture Adjustment Method: Adjust the [HOPS] Bus-Data for the best Horizontal centring

CIRCUIT CHECKS

HIGH VOLTAGE CHECK

CAUTION: There is no HIGH VOLTAGE ADJUSTMENT on this chassis. Checking should be done following the steps below.

1. Connect an accurate high voltage meter to the second anode of the picture tube.
2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST controls to minimum (zero beam current).
3. High voltage must be measured below (B) kV.

Refer to table-1 for high voltage (B).
(See SETTING & ADJUSTING DATA on page 13)

4. Vary the BRIGHTNESS control to both extremes to be sure the high voltage does not exceed the limit under any conditions.

CHAPTER 2 SPECIFIC INFORMATIONS

SETTING & ADJUSTING DATA

【 SAFETY INSTRUCTIONS 】

		21"
HIGH VOLTAGE AT ZERO BEAM:	(A)	28.3kV
MAX HIGH VOLTAGE:	(B)	31.0 kV
AC VOLTAGE	(C)	220~240V

Table-1

【 SERVICE MODE 】

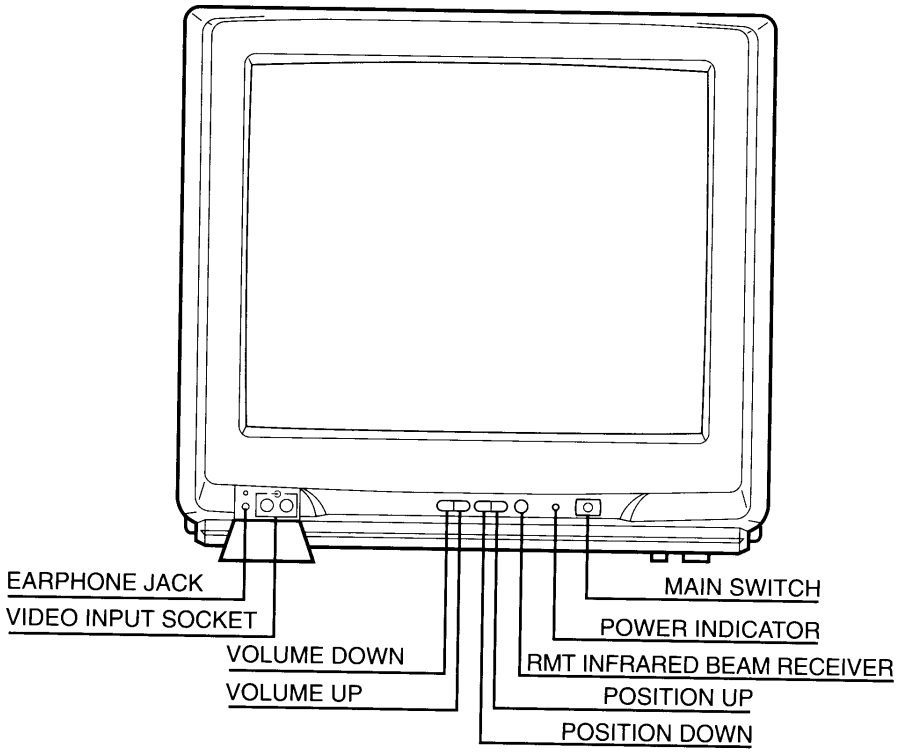
ADJUSTING ITEMS AND DATA IN THE SERVICE AND DESIGN MODE:

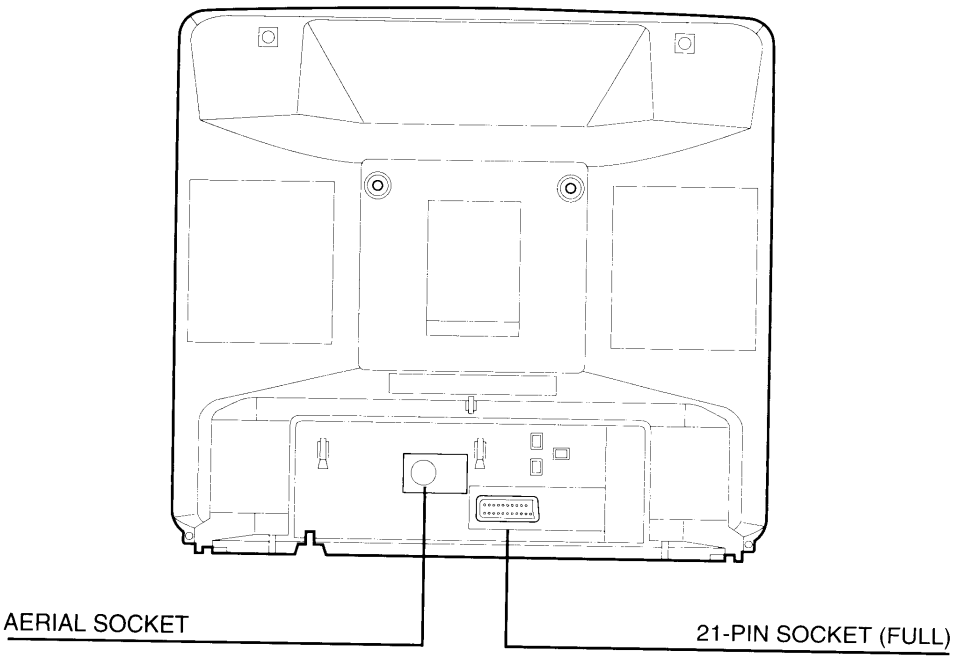
Item	Name of adjustment	Preset	Data
RCUT	R CUTOFF	20H	←
GCUT	G CUTOFF	20H	←
BCUT	B CUTOFF	20H	←
GDRV	G DRIVE	40H	←
BDRV	B DRIVE	40H	←
BRTC	SUB-BRIGHT	40H	31H
HIT	HEIGHT	20H	11H
RAGC	RF AGC	30H	←

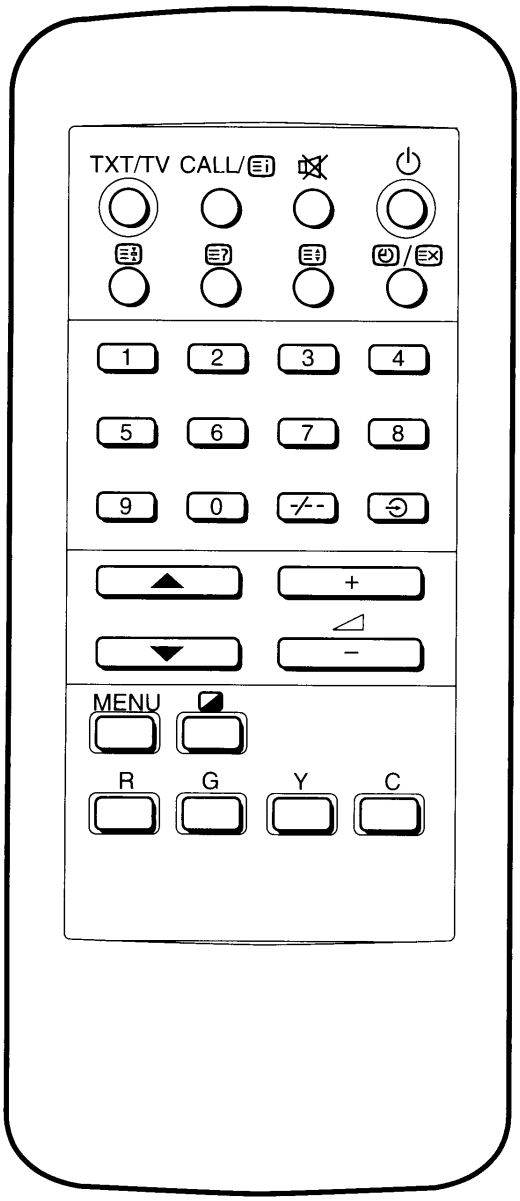
Item	Name of adjustment	Preset	Data
AFT	PIF VCO	40H	←
LAGC	RF AGC (L'SYS)	30H	←
LAFT	PIF VCO (L'SYS)	40H	←
SBY	SECAM OFFSET B-Y	08H	←
SRY	SECAM OFFSET R-Y	08H	←

Table-2

LOCATION OF CONTROLS
(Representative: 2180TD)







KEY ASSIGNMENT

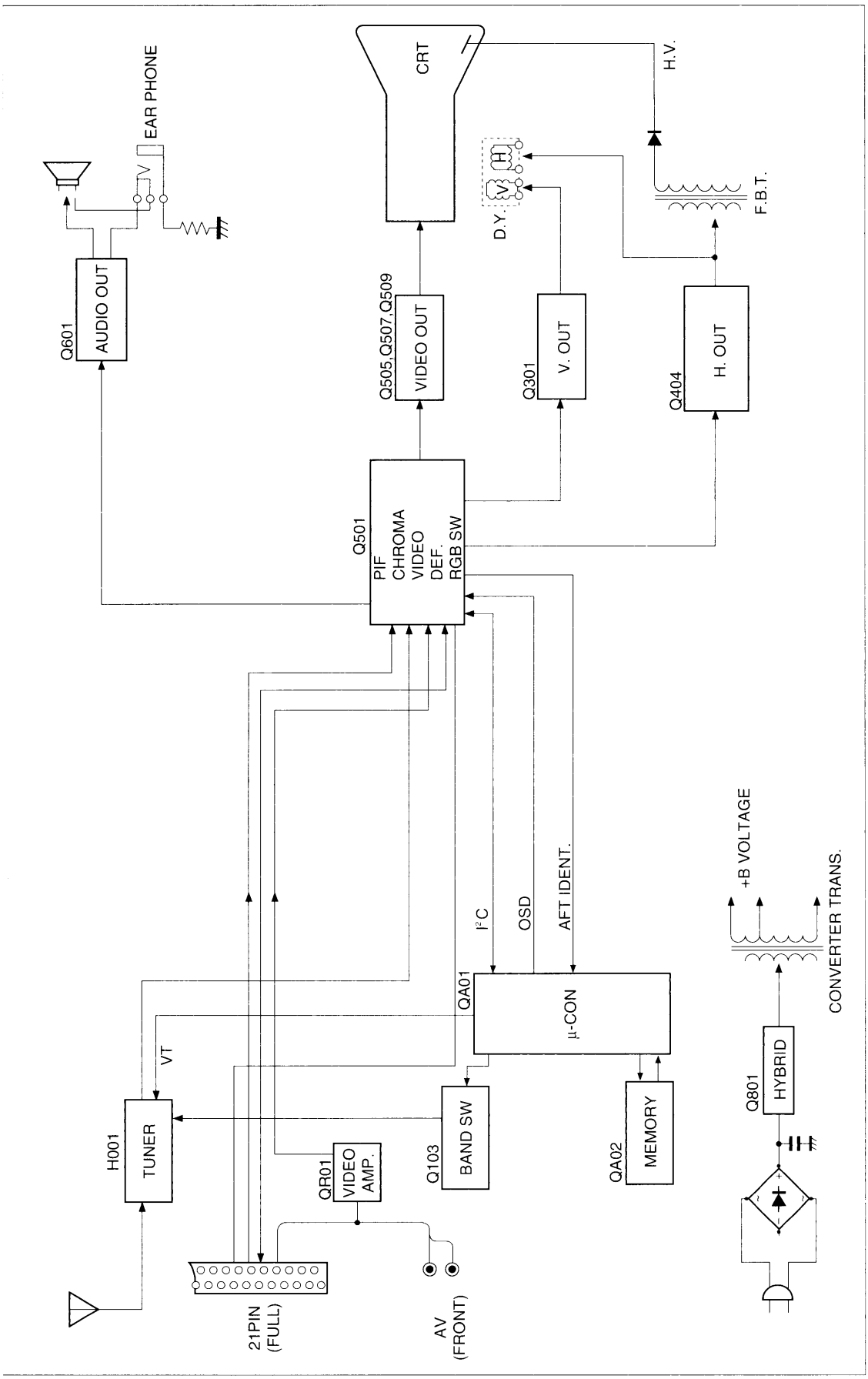
⏻ ..... ON/STAND-BY
🔇 ..... MUTE
CALL ..... DISPLAY CALL
MENU ..... TUNING & OTHER MENU
◪ ..... PICTURE MENU
1~9,0 ..... TEN KEY
- / - - ..... 1 or 2 place
⊖ ..... VIDEO INPUT (EXTERNAL INPUT SOURCE SW.)
◿ ..... VOLUME
+ ..... LEVEL PLUS (VOLUME, MENU)
− ..... LEVEL MINUS (VOLUME, MENU)
▲ ..... UP (POSI., CH., TEXT PAGE)
▼ ..... DOWN (POSI., CH., TEXT PAGE)

TELE-TEXT
- TXT/TV ..... TEXT, MIX, TV MODE SW.
- ..... HOLD
- ..... <TEXT MODE> REVEAL / CONCEAL
- ..... <TEXT MODE> F-T-B (FULL, TOP, BOTTOM)
- /EX ..... TIME DISPLAY (TV MODE) TEXT CLEAR (TEXT MODE)
- ..... INDEX, INITIAL

FLOF COLOUR KEY (4 key used)
Red/Green/Yellow/Blue

SPECIFIC INFORMATIONS

CIRCUIT BLOCK DIAGRAM



CHASSIS AND CABINET REPLACEMENT PARTS LIST

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 3 OF THIS MANUAL.

CAUTION: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE. Do not degrade the safety of the receiver through improper servicing.

NOTICE:
- *The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.*
- *The PC board assembly with ∗ mark is no longer available after the end of the production.*

Model : 2181TB/2180TD

Capacitors ..... CD : Ceramic Disk PF : Plastic Film EL : Electrolytic
Resistors ..... CF : Carbon Film CC : Carbon Composition MF : Metal Film
OMF : Oxide Metal Film VR : Variable Resistor FR : Fusible Resistor
(All CD and PF capacitors are ±5%, 50V and all resistors, ±5%, 1/6W unless otherwise noted.)

Location No.	Part No.	Description
CAPACITORS		
C101	24232103	CD, 0.01μF, +80%, −20% (2180TD)
C102	24232103	CD, 0.01μF, +80%, −20%
C103	24232103	CD, 0.01μF, +80%, −20% (2180TD)
C104	24232103	CD, 0.01μF, +80%, −20%
C105	24232103	CD, 0.01μF, +80%, −20% (2180TD)
C106	24232103	CD, 0.01μF, +80%, −20%
C107	24794102	EL, 1000μF, ±20%, 16V
C108	24794470	EL, 47μF, ±20%, 16V (2180TD)
C111	24538104	PF, 0.1μF
C131	24538474	PF, 0.47μF
C132	24474102	CD, 1000pF, ±10%
C133	24474102	CD, 1000pF, ±10%
C161	24794101	EL, 100μF, ±20%, 16V
C162	24473560	CD, 56pF
C163	24473560	CD, 56pF
C165	24794222	EL, 2200μF, ±20%, 16V (2180TD)
C168	24232103	CD, 0.01μF, +80%, −20%
C190	24232103	CD, 0.01μF, +80%, −20%
C193	24797229	EL, 2.2μF, ±20%, 50V
C195	24232103	CD, 0.01μF, +80%, −20%
C196	24538104	PF, 0.1μF
C197	24538104	PF, 0.1μF
C198	24538104	PF, 0.1μF
C199	24232103	CD, 0.01μF, +80%, −20%
C202	24206010	EL, 1μF, 50V
C203	24206228	EL, 0.22μF, 50V
C204	24590222	PF, 2200pF
C205	24473100	CD, 10pF
C207	24538104	PF, 0.1μF
C208	24538104	PF, 0.1μF
C209	24538104	PF, 0.1μF
C210	24794101	EL, 100μF, ±20%, 16V
C211	24232103	CD, 0.01μF, +80%, −20%
C212	24473100	CD, 10pF
C213	24473100	CD, 10pF
C214	24473100	CD, 10pF

Location No.	Part No.	Description
C215	24797100	EL, 10μF, ±20%, 50V
C217	24797010	EL, 1μF, ±20%, 50V
C219	24538474	PF, 0.47μF
C220	24212152	CD, 1500pF, ±10%
C221	24232103	CD, 0.01μF, +80%, −20%
C222	24795471	EL, 470μF, ±20%, 25V
C223	24666470	EL, 47μF, ±20%, 16V
C224	24232103	CD, 0.01μF, +80%, −20%
C227	24669010	EL, 1μF, ±20%, 50V
C228	24590203	PF, 0.02μF
C229	24797478	EL, 0.47μF, ±20%, 50V
C230	24797478	EL, 0.47μF, ±20%, 50V
C231	24797478	EL, 0.47μF, ±20%, 50V
C232	24797478	EL, 0.47μF, ±20%, 50V
C234	24232103	CD, 0.01μF, +80%, −20%
C235	24794101	EL, 100μF, ±20%, 16V
C236	24797478	EL, 0.47μF, ±20%, 50V
C237	24212332	CD, 3300pF, ±10%
C238	24232103	CD, 0.01μF, +80%, −20%
C239	24794101	EL, 100μF, ±20%, 16V
C240	24538474	PF, 0.47μF
C241	24474101	CD, 100pF, ±10%
C242	24474221	CD, 220pF, ±10%
C243	24794101	EL, 100μF, ±20%, 16V (2181TB)
C243	24794100	EL, 10μF, ±20%, 16V (2180TD)
C244	24232103	CD, 0.01μF, +80%, −20%
C245	24794220	EL, 22μF, ±20%, 16V
C306	24212391	CD, 390pF, ±10%
C312	24590563	PF, 0.056μF
C313	24668101	EL, 100μF, ±20%, 35V
C314	24214391	CD, 390pF, ±10%, 500V
C315	24214221	CD, 220pF, ±10%, 500V (2180TD)
C317	24617912	EL, 2.2μF, ±10%, 50V
C318	24666472	EL, 4700μF, ±20%, 16V (2181TB)
C318	24667222	EL, 2200μF, ±20%, 25V (2180TD)
C323	24082049	PF, 0.047μF, 100V
C325	24668221	EL, 220μF, ±20%, 35V

Location No.	Part No.	Description
C331	24668102	EL, 1000μF, ±20%, 35V
C332	24082057	PF, 0.22μF, 100V
C401	24828303	PF, 0.03μF, 200V
C402	24797478	EL, 0.47μF, ±20%, 50V
C410	24082261	PF, 5600pF, 100V
C416	24214102	CD, 1000pF, ±10%, 500V
⚠C440	24082342	PF, 5400pF, ±3%, 1500V
C441	24214221	CD, 220pF, ±10%, 500V (2180TD)
C442	24095754	PF, 0.43μF, 200V
C443	24214221	CD, 220pF, ±10%, 500V (2180TD)
C444	24082335	PF, 3300pF, ±3%, 1500V
C445	24095903	PF, 0.056μF, ±10%, 250V
C446	24666471	EL, 470μF, ±20%, 16V
C447	24679479	EL, 4.7μF, ±20%, 250V
C448	24640908	EL, 33μF, ±20%, 160V
C449	24667102	EL, 1000μF, ±20%, 25V
⚠C463	24212152	CD, 1500pF, ±10%
C470	24666220	EL, 22μF, ±20%, 16V
C471	24538474	PF, 0.47μF
C481	24666220	EL, 22μF, ±20%, 16V
C482	24666101	EL, 100μF, ±20%, 16V
C601	24795471	EL, 470μF, ±20%, 25V
C602	24538104	PF, 0.1μF
C603	24795221	EL, 220μF, ±20%, 25V
C605	24206010	EL, 1μF, 50V
C606	24795220	EL, 22μF, ±20%, 25V
C607	24590682	PF, 6800pF
C608	24797010	EL, 1μF, ±20%, 50V
C609	24794470	EL, 47μF, ±20%, 16V
C610	24206010	EL, 1μF, 50V
C611	24212102	CD, 1000pF, ±10%
C612	24212102	CD, 1000pF, ±10%
C613	24212102	CD, 1000pF, ±10%
C616	24797100	EL, 10μF, ±20%, 50V
C617	24206010	EL, 1μF, 50V
C618	24797470	EL, 47μF, ±20%, 50V
C619	24590152	PF, 1500pF (2181TB)
C619	24590122	PF, 1200pF (2180TD)
C620	24797229	EL, 2.2μF, ±20%, 50V
C623	24232103	CD, 0.01μF, +80%, −20% (2180TD)
C624	24232103	CD, 0.01μF, +80%, −20%
⚠C801	24082927	PF, 0.22μF, ±20%, AC275V
⚠C802	24094656	CD, 2200pF, ±20%, AC400V
⚠C803	24094656	CD, 2200pF, ±20%, AC400V
C804	24794470	EL, 47μF, ±20%, 16V
C807	24092281	CD, 4700pF, ±20%, AC250V
C808	24092281	CD, 4700pF, ±20%, AC250V
C809	24086871	EL, 120μF, ±20%, 400V
C812	24092341	CD, 470pF, ±10%, 2kV
C813	24095931	PF, 2200pF, 1250V
C814	24590223	PF, 0.022μF
C815	24590182	PF, 1800pF
C816	24666470	EL, 47μF, ±20%, 16V
C817	24676220	EL, 22μF, ±20%, 100V
C820	24794470	EL, 47μF, ±20%, 16V
C821	24797010	EL, 1μF, ±20%, 50V
C828	24212101	CD, 100pF, ±10%
C829	24795471	EL, 470μF, ±20%, 25V
C830	24092337	CD, 220pF, ±10%, 2kV
C831	24086953	EL, 220μF, ±20%, 160V
C835	24797479	EL, 4.7μF, ±20%, 50V

Location No.	Part No.	Description
C836	24797100	EL, 10μF, ±20%, 50V
C837	24797100	EL, 10μF, ±20%, 50V
C838	24538474	PF, 0.47μF
C849	24214471	CD, 470pF, ±10%, 500V
C901	24700100	EL, 10μF, ±20%, 250V
C902	24095931	PF, 2200pF, 1250V
C903	24794100	EL, 10μF, ±20%, 16V
C904	24794220	EL, 22μF, ±20%, 16V
C905	24212102	CD, 1000pF, ±10% (2181TB)
C905	24212103	CD, 0.01μF, ±10% (2180TD)
C931	24212391	CD, 390pF, ±10%
C932	24212391	CD, 390pF, ±10%
C933	24212391	CD, 390pF, ±10%
C934	24794471	EL, 470μF, ±20%, 16V
C936	24797479	EL, 4.7μF, ±20%, 50V
CA01	24474101	CD, 100pF, ±10%
CA14	24232103	CD, 0.01μF, +80%, −20%
CA15	24794100	EL, 10μF, ±20%, 16V
CA16	24232103	CD, 0.01μF, +80%, −20%
CA18	24232103	CD, 0.01μF, +80%, −20%
CA19	24794470	EL, 47μF, ±20%, 16V
CA20	24474101	CD, 100pF, ±10%
CA21	24435470	CD, 47pF, 500V
CA22	24538104	PF, 0.1μF
CA24	24538104	PF, 0.1μF
CA37	24538104	PF, 0.1μF
CA39	24474391	CD, 390pF, ±10%
CA40	24212221	CD, 220pF, ±10%
CA42	24538104	PF, 0.1μF
CA43	24538104	PF, 0.1μF
CA44	24794470	EL, 47μF, ±20%, 16V
CA45	24473560	CD, 56pF
CA46	24473560	CD, 56pF
CA47	24212103	CD, 0.01μF, ±10% (2180TD)
CA48	24212103	CD, 0.01μF, ±10% (2180TD)
CA49	24475222	CD, 2200pF, 16V
CA50	24797479	EL, 4.7μF, ±20%, 50V
CB01	24212472	CD, 4700pF, ±10%
CB02	24212561	CD, 560pF, ±10%
CB03	24763331	EL, 330μF, ±20%, 16V
CB04	24436181	CD, 180pF
CB05	24206010	EL, 1μF, 50V
CR01	24794100	EL, 10μF, ±20%, 16V
CR02	24797010	EL, 1μF, ±20%, 50V
CR03	24797010	EL, 1μF, ±20%, 50V
CR04	24797010	EL, 1μF, ±20%, 50V
CR05	24797010	EL, 1μF, ±20%, 50V
CR06	24797010	EL, 1μF, ±20%, 50V
CR07	24797010	EL, 1μF, ±20%, 50V
CR08	24473270	CD, 27pF
CV01	24794101	EL, 100μF, ±20%, 16V
CV02	24793471	EL, 470μF, ±20%, 10V

RESISTORS

R001	24366333	CF, 33k ohm (2180TD)
R002	24366102	CF, 1k ohm (2181TB)
R002	24366752	CF, 7500 ohm (2180TD)
R101	24366101	CF, 100 ohm
R103	24366103	CF, 10k ohm
R105	24366101	CF, 100 ohm
R106	24366153	CF, 15k ohm
R107	24366102	CF, 1k ohm (2180TD)
R109	24366563	CF, 56k ohm
R120	24366102	CF, 1k ohm (2180TD)

Location No.	Part No.	Description
R121	24366392	CF, 3900 ohm (2180TD)
R135	24366682	CF, 6800 ohm
R136	24366122	CF, 1200 ohm
R137	24366681	CF, 680 ohm
R138	24366360	CF, 36 ohm
R171	24366153	CF, 15k ohm (2180TD)
R173	24366271	CF, 270 ohm (2180TD)
R174	24366392	CF, 3900 ohm
R175	24366471	CF, 470 ohm
R179	24366201	CF, 200 ohm
R180	24366331	CF, 330 ohm
R181	24366221	CF, 220 ohm (2181TB)
R181	24366560	CF, 56 ohm (2180TD)
R182	24366820	CF, 82 ohm
R185	24366101	CF, 100 ohm
R186	24366391	CF, 390 ohm (2181TB)
R186	24366152	CF, 1500 ohm (2180TD)
R187	24366223	CF, 22k ohm
R188	24366223	CF, 22k ohm
R189	24366102	CF, 1k ohm
R191	24942226	CC, 22M ohm, 1/2W
R201	24366222	CF, 2200 ohm
R204	24366751	CF, 750 ohm
R205	24366303	CF, 30k ohm
R206	24366271	CF, 270 ohm
R207	24366271	CF, 270 ohm
R208	24366271	CF, 270 ohm
R209	24366223	CF, 22k ohm
R210	24366101	CF, 100 ohm
R211	24366101	CF, 100 ohm
R212	24552221	OMF, 220 ohm, 1/2W
R213	24366103	CF, 10k ohm
R214	24366472	CF, 4700 ohm
R215	24366561	CF, 560 ohm
R216	24366102	CF, 1k ohm
R217	24366101	CF, 100 ohm
R218	24366824	CF, 820k ohm
R219	24366151	CF, 150 ohm
R220	24366102	CF, 1k ohm
R221	24366104	CF, 100k ohm
R222	24366472	CF, 4700 ohm
R223	24366222	CF, 2200 ohm
R224	24366123	CF, 12k ohm
R225	24366102	CF, 1k ohm
R240	24366682	CF, 6800 ohm
R241	24366123	CF, 12k ohm
R244	24366152	CF, 1500 ohm
R316	24366102	CF, 1k ohm
R317	24366563	CF, 56k ohm
R318	24366683	CF, 68k ohm
R319	24552332	OMF, 3300 ohm, 1/2W
R320	24383271	OMF, 270 ohm, 2W
R321	24366393	CF, 39k ohm
R322	24366224	CF, 220k ohm
R323	24322119	MF, 1.1 ohm, 1W (2181TB)
R323	24322229	MF, 2.2 ohm, 1W (2180TD)
R325	24366473	CF, 47k ohm (2181TB)
R325	24366273	CF, 27k ohm (2180TD)
R326	24382470	OMF, 47 ohm, 1W
⚠R327	24339479	MF, 4.7 ohm, 2W
R327	24339479	MF, 4.7 ohm, 2W
R330	24321109	MF, 1 ohm, 1/2W
R333	24366222	CF, 2200 ohm (2181TB)
R333	24366102	CF, 1k ohm (2180TD)

Location No.	Part No.	Description
R360	24366562	CF, 5600 ohm (2181TB)
R360	24366622	CF, 6200 ohm (2180TD)
R410	24552472	OMF, 4700 ohm, 1/2W
R411	24366561	CF, 560 ohm
R412	24322129	MF, 1.2 ohm, 1W
R413	24382471	OMF, 470 ohm, 1W
R414	24366181	CF, 180 ohm
R416	24510152	Cement, 1500 ohm, 5W
R419	24366560	CF, 56 ohm
R440	24366103	CF, 10k ohm
R442	24382102	OMF, 1k ohm, 1W
⚠R444	24338398	MF, 0.39 ohm, 1W
⚠R448	24338338	MF, 0.33 ohm, 1W
R470	24338568	MF, 0.56 ohm, 1W
R471	24552101	OMF, 100 ohm, 1/2W
R472	24376393	CF, 39k ohm, 1/2W
R474	24366331	CF, 330 ohm
R475	24366102	CF, 1k ohm
R477	24366153	CF, 15k ohm
R517	24366103	CF, 10k ohm
R580	24366103	CF, 10k ohm
R601	24366339	CF, 3.3 ohm
R602	24366123	CF, 12k ohm
R603	24366182	CF, 1800 ohm
R604	24366103	CF, 10k ohm
R605	24552331	OMF, 330 ohm, 1/2W (2180TD)
R607	24366103	CF, 10k ohm
R610	24366332	CF, 3300 ohm
R614	24366562	CF, 5600 ohm (2180TD)
R615	24366562	CF, 5600 ohm
R616	24366562	CF, 5600 ohm
R618	24366474	CF, 470k ohm
R623	24366682	CF, 6800 ohm
R624	24366681	CF, 680 ohm
R625	24366104	CF, 100k ohm
R626	24366103	CF, 10k ohm
R628	24366104	CF, 100k ohm
R629	24366153	CF, 15k ohm
R630	24366392	CF, 3900 ohm
⚠R801	24009954	Metal-Glazed Resistor, 2.2M ohm, 1/2W
R803	24366155	CF, 1.5M ohm
R804	24366561	CF, 560 ohm
R805	24377394	CF, 390k ohm, 1W
R806	24383470	OMF, 47 ohm, 2W
R807	24383330	OMF, 33 ohm, 2W
R808	24531100	FR, 10 ohm, 1/2W
R809	24366561	CF, 560 ohm
R810	24366561	CF, 560 ohm
R811	24322278	MF, 0.27 ohm, 1W
R812	24366470	CF, 47 ohm
R813	24366561	CF, 560 ohm
R814	24366102	CF, 1k ohm
R815	24366561	CF, 560 ohm
R816	24366103	CF, 10k ohm
R817	24366102	CF, 1k ohm
R818	24366102	CF, 1k ohm
R819	24321689	OMF, 6.8 ohm, 1/2W
R820	24366561	CF, 560 ohm
R825	24366472	CF, 4700 ohm
R828	24366339	CF, 3.3 ohm
R842	24366681	CF, 680 ohm
R843	24366821	CF, 820 ohm

Location No.	Part No.	Description
⚠R844	24005007	Metal-Glazed Resistor, 8.2M ohm, 1W
R848	24366392	CF, 3900 ohm
R860	24366122	CF, 1200 ohm
R865	24366681	CF, 680 ohm
R866	24366471	CF, 470 ohm
R867	24366103	CF, 10k ohm
R868	24366472	CF, 4700 ohm
R870	24383822	OMF, 8200 ohm, 2W
R871	24366472	CF, 4700 ohm
R872	24510479	Cement, 4.7 ohm, 5W
R878	24531270	FR, 27 ohm, 1/2W
R879	24366472	CF, 4700 ohm
R884	24531120	FR, 12 ohm, 1/2W
⚠R890	24019340	PTC Thermistor, 18 ohm
R893	24366103	CF, 10k ohm
R901	24552272	OMF, 2700 ohm, 1/2W
R902	24552272	OMF, 2700 ohm, 1/2W
R903	24552272	OMF, 2700 ohm, 1/2W
R904	24366102	CF, 1k ohm
R905	24366229	CF, 2.2 ohm
⚠R920	24000940	FR, 2 ohm, 2W
R928	24366101	CF, 100 ohm
R930	24366681	CF, 680 ohm
R931	24366102	CF, 1k ohm
R932	24366361	CF, 360 ohm
R933	24366681	CF, 680 ohm
R934	24366681	CF, 680 ohm
R935	24366681	CF, 680 ohm
R936	24366471	CF, 470 ohm
R937	24366471	CF, 470 ohm
R938	24366471	CF, 470 ohm
R947	24552820	OMF, 82 ohm, 1/2W
R948	24366101	CF, 100 ohm
R961	24366390	CF, 39 ohm
R962	24366390	CF, 39 ohm
R963	24366390	CF, 39 ohm
R966	24366101	CF, 100 ohm
R967	24366101	CF, 100 ohm
R991	24382183	OMF, 18k ohm, 1W
R992	24382183	OMF, 18k ohm, 1W
R993	24382183	OMF, 18k ohm, 1W
RA01	24366103	CF, 10k ohm
RA02	24366472	CF, 4700 ohm
RA03	24366103	CF, 10k ohm
RA05	24366103	CF, 10k ohm
RA06	24366103	CF, 10k ohm
RA07	24366472	CF, 4700 ohm
RA09	24019001	MF, 100k ohm, ±1%, 1/4W
RA10	24366102	CF, 1k ohm
RA11	24366182	CF, 1800 ohm
RA12	24366103	CF, 10k ohm
RA14	24366103	CF, 10k ohm
RA15	24366331	CF, 330 ohm
RA16	24366331	CF, 330 ohm
RA17	24366303	CF, 30k ohm(2180TD)
RA24	24366225	CF, 2.2M ohm
RA25	24366333	CF, 33k ohm
RA27	24366333	CF, 33k ohm
RA28	24000242	MF, 18k ohm, ±1%, 1/4W
RA33	24366391	CF, 390 ohm
RA34	24000245	MF, 33k ohm, ±1%, 1/4W
RA35	24366223	CF, 22k ohm
RA37	24366273	CF, 27k ohm

Location No.	Part No.	Description
RA40	24366102	CF, 1k ohm
RA41	24366103	CF, 10k ohm
RA42	24366103	CF, 10k ohm
RA45	24366103	CF, 10k ohm
RA46	24366103	CF, 10k ohm(2180TD)
RA49	24366103	CF, 10k ohm
RA54	24366472	CF, 4700 ohm
RA56	24366471	CF, 470 ohm(2180TD)
RA57	24366103	CF, 10k ohm
RA58	24366222	CF, 2200 ohm
RA59	24366471	CF, 470 ohm(2180TD)
RA60	24366331	CF, 330 ohm
RA61	24366103	CF, 10k ohm
RA62	24366223	CF, 22k ohm
RA64	24366103	CF, 10k ohm
RA65	24366103	CF, 10k ohm
RA70	24366332	CF, 3300 ohm
RA71	24366682	CF, 6800 ohm
RA72	24366203	CF, 20k ohm
RA76	24366103	CF, 10k ohm
RA78	24366102	CF, 1k ohm
RA81	24366471	CF, 470 ohm
RA86	24366103	CF, 10k ohm
RA88	24366103	CF, 10k ohm
RA90	24366103	CF, 10k ohm
RA91	24366102	CF, 1k ohm
RA96	24366123	CF, 12k ohm
RA97	24366152	CF, 1500 ohm
RB01	24366223	CF, 22k ohm
RB02	24366392	CF, 3900 ohm
RB03	24366392	CF, 3900 ohm
RB04	24366123	CF, 12k ohm
RB05	24366333	CF, 33k ohm
RB06	24366564	CF, 560k ohm
RB07	24366182	CF, 1800 ohm
RB08	24366471	CF, 470 ohm
RE01	24366391	CF, 390 ohm
RR01	24366472	CF, 4700 ohm
RR02	24366472	CF, 4700 ohm
RR03	24366103	CF, 10k ohm
RR04	24366333	CF, 33k ohm
RR05	24366103	CF, 10k ohm
RR06	24366102	CF, 1k ohm
RR16	24366331	CF, 330 ohm
RR17	24366331	CF, 330 ohm
RR18	24366331	CF, 330 ohm
RV01	24552101	OMF, 100 ohm, 1/2W
RV02	24552101	OMF, 100 ohm, 1/2W
RV04	24366680	CF, 68 ohm
RV05	24366103	CF, 10k ohm
RV08	24366750	CF, 75 ohm
RV09	24366101	CF, 100 ohm
RV10	24366750	CF, 75 ohm
RV11	24366101	CF, 100 ohm
RV12	24366750	CF, 75 ohm
RV13	24366101	CF, 100 ohm
RV14	24366750	CF, 75 ohm
RV15	24366750	CF, 75 ohm
RV26	24366391	CF, 390 ohm
RV27	24366391	CF, 390 ohm
RV28	24366391	CF, 390 ohm

Location No.	Part No.	Description
COILS & TRANSFORMERS		
L101	23238558	Coil, Peaking, TRF4R47AJ (2181TB)
L101	23238560	Coil, Peaking, TRF4R68AJ (2180TD)
L102	23221803	Coil, Choke, TLN3040D
L105	23261985	Coil, RF Choke, TRF9221 (2181TB)
L105	23261986	Coil, RF Choke, TRF9220 (2180TD)
L107	23238713	Coil, Peaking, TRF4120AJ
L108	23238714	Coil, Peaking, TRF4100AJ (2180TD)
L161	23262813	Coil, IF, TRF1077D
L202	23289100	Coil, Peaking, TRF4100AF
L204	23289100	Coil, Peaking, TRF4100AF
L205	23289680	Coil, Peaking, TRF4680AF
L311	23103859	Coil (Ferrite Bead), TEM2011
L408	23221722	Coil, Choke, TLN3142D
L410	23289100	Coil, Peaking, TRF4100AF
L441	23233070	Coil, Linearity, TLN2111G
L811	23103859	Coil (Ferrite Bead), TEM2011
L821	23280016	Coil, Peaking, TRF4100AZ
L823	23103859	Coil (Ferrite Bead), TEM2011
L826	23280016	Coil, Peaking, TRF4100AZ
L829	23103859	Coil (Ferrite Bead), TEM2011
L866	23289229	Coil, Peaking, TRF42R2AF
⚠L901	23200205	Coil, Degaussing, TSB-2333AR
L990	23289100	Coil, Peaking, TRF4100AF
LA02	23289109	Coil, Peaking, TRF41R0AF
LA03	23103859	Coil (Ferrite Bead), TEM2011
LA04	23103859	Coil (Ferrite Bead), TEM2011
LA05	23103859	Coil (Ferrite Bead), TEM2011
⚠T401	23224983	Transformer, Horiz. Drive, TLN1039
⚠T461	23236510	Transformer, Flyback, TFB4123BE
T461A	23236448	Transformer, Flyback, TFB4116AR
T461B	23236448	Transformer, Flyback, TFB4116AR
T461C	23236448	Transformer, Flyback, TFB4116AR
⚠T801	23211858	Line Filter, TRF3139
⚠T803	23217240	Transformer, Converter, TPW3301AR
SEMICONDUCTORS		
Q103	23119441	IC, LA7910(2180TD)
Q105	A6708871	Transistor, 2SC388ATM
Q110	A6317440	Transistor, 2SC1815-Y
Q111	A6317440	Transistor, 2SC1815-Y
Q112	A6534053	Transistor, 2SA1015-Y(TE
Q201	A6317440	Transistor, 2SC1815-Y
Q210	23114530	Transistor, 2SA933S-Q
Q212	A6317440	Transistor, 2SC1815-Y
Q301B	23037310	Screw, BTBW3X10 SZN
Q301	B0377890	IC, TA8403K
Q302	A6317440	Transistor, 2SC1815-Y
Q402	A6330069	Transistor, 2SC2482 FA-1
Q404	23314375	Transistor, ON4409(508D)
Q404B	23037310	Screw, BTBW3X10 SZN
Q470	A6547250	Transistor, 2SA1320
Q480	23314141	Transistor, 2SC3852

Location No.	Part No.	Description
Q480B	23035308	Screw, BTB3X8 SZN
Q501	B0101539	IC, TB1231N(FA-1
Q601	23119668	IC, TDA2611A
Q602	23318916	IC, MC14053BCP
Q603	A6342206	Transistor, 2SC2878-A(TE
Q604	A6534053	Transistor, 2SA1015-Y(TE
Q606	A6010040	Transistor, RN2004
Q608	A6317440	Transistor, 2SC1815-Y
Q609	A6342206	Transistor, 2SC2878-A(TE
Q801	23314146	IC(STR), STR58041
Q802	A6534145	Transistor, 2SA1020-Y(C)
Q803	A6333346	Transistor, 2SC2655-Y(C)
Q804	A6317440	Transistor, 2SC1815-Y
Q805	A6317440	Transistor, 2SC1815-Y
Q806	A6317440	Transistor, 2SC1815-Y
⚠Q826	A8643108	Photo Coupler, TLP621(GR-LF
Q828	A6317440	Transistor, 2SC1815-Y
Q831	A6317440	Transistor, 2SC1815-Y
Q835	23318299	IC, L78MR05
Q836	A6534053	Transistor, 2SA1015-Y(TE
Q861	23314141	Transistor, 2SC3852
Q861B	70391356	Screw, BITTB3X10 SZN
Q870	A6333346	Transistor, 2SC2655-Y(C)
Q871	A6317440	Transistor, 2SC1815-Y
Q905	A6330069	Transistor, 2SC2482 FA-1
Q907	A6330069	Transistor, 2SC2482 FA-1
Q909	A6330069	Transistor, 2SC2482 FA-1
Q910	A6330069	Transistor, 2SC2482 FA-1
Q911	23114530	Transistor, 2SA933S-Q
QA01	23906524	IC, SAA5290ZP084
QA02	23904706	IC, NM24C02EN
QA03	A6317440	Transistor, 2SC1815-Y
QA04	A6317440	Transistor, 2SC1815-Y
QA08	A6317440	Transistor, 2SC1815-Y
QA09	A6317440	Transistor, 2SC1815-Y
QA10	A6317440	Transistor, 2SC1815-Y
QA25	A6317440	Transistor, 2SC1815-Y
QB01	A6317440	Transistor, 2SC1815-Y
QB02	A6534053	Transistor, 2SA1015-Y(TE
QR01	70129053	IC, BA7603
QR02	A6002040	Transistor, RN1204
QR03	A6734590	Transistor, 2SC752(G)TM-Y
QR05	A6317440	Transistor, 2SC1815-Y
QR07	A6002040	Transistor, RN1204
D101	23115599	Diode, 1N4148 (2180TD)
QV01	A6317440	Transistor, 2SC1815-Y
D108	23115878	Diode, Zener, μPC574J, (L)
D109	23115599	Diode, 1N4148
D111	23115599	Diode, 1N4148
D201	A7150258	Diode, 1SS176 (2181TB)
D201	23115599	Diode, 1N4148 (2180TD)
D202	23316667	Diode, Zener, MTZJ4.7C
D206	23115599	Diode, 1N4148
D208	23115599	Diode, 1N4148
D301	23118479	Diode, BYD33J
D302	23118479	Diode, BYD33J
D312	23316794	Diode, SC570A
D401	23316668	Diode, Zener, MTZJ5.1A
D402	23316666	Diode, Zener, MTZJ4.7B
D403	23316688	Diode, Zener, MTZJ9.1C
D406	23118479	Diode, BYD33J
D408	23118052	Diode, RU4Z
D441	23118338	Diode, RU4AM
D442	23316254	Diode, ERC06-15

Location No.	Part No.	Description
D444	23118479	Diode, BYD33J
D471	A7801205	SCR, SF0R3G42
D474	23316728	Diode, Zener, MTZJ16B
D475	23316719	Diode, Zener, MTZJ12B
D601	23115599	Diode, 1N4148
D602	23115599	Diode, 1N4148
D603	23115599	Diode, 1N4148
D610	23115599	Diode, 1N4148
D801	23118124	Diode, LB-156 (LF-B)
D810	23316725	Diode, Zener, MTZJ15B
D811	23115599	Diode, 1N4148
D812	23118479	Diode, BYD33J
D813	23115599	Diode, 1N4148
D814	23316672	Diode, Zener, MTZJ5.6B
D815	23115599	Diode, 1N4148
D816	23316648	Diode, Zener, MTZJ2.2A
D817	23118479	Diode, BYD33J
D818	23118479	Diode, BYD33J
D819	23316675	Diode, Zener, MTZJ6.2B
D830	23118479	Diode, BYD33J
D832	23118451	Diode, RU-4A
D847	23115599	Diode, 1N4148
D848	23316666	Diode, Zener, MTZJ4.7B
D860	23316674	Diode, Zener, MTZJ6.2A
D861	23316672	Diode, Zener, MTZJ5.6B
D870	23115599	Diode, 1N4148
D878	23316689	Diode, Zener, MTZJ10A
D991	23316554	Diode, 1SS146
D992	23316554	Diode, 1SS146
D993	23316554	Diode, 1SS146
D994	23115599	Diode, 1N4148
DA01	23316675	Diode, Zener, MTZJ6.2B
DA02	23115599	Diode, 1N4148
DA03	23115599	Diode, 1N4148
DA32	23115599	Diode, 1N4148
DE50	23358504	LED, Red, SCL003URC3FX
DR04	23115599	Diode, 1N4148
DR06	23115599	Diode, 1N4148

MISCELLANEOUS

B202	23451651	Holder, FBT
⚠F801	23144507	Fuse, 3.15A
F801A	23165433	Holder, Fuse
⚠F803	23144875	Fuse, 0.63A
F803A	23165433	Holder, Fuse
G002	24366681	CF, 680 ohm
G003	24366681	CF, 680 ohm
G009	23103859	Coil (Ferrite Bead), TEM2011 (2180TD)
G010	24366330	CF, 33 ohm (2180TD)
G011	24366101	CF, 100 ohm(2180TD)
G012	23115599	Diode, 1N4148
G013	23115599	Diode, 1N4148
G017	24366473	CF, 47k ohm
G019	24366102	CF, 1k ohm
G021	23289109	Coil, Peaking, TRF41R0AF
K901	23904750	IR Receiver
P601	23365292	Jack (2180TD)
⚠P801	23372012	Power Cord (2181TB)
⚠P801	23372014	Power Cord (2180TD)
PH01	23365598	Connector, 21Pin
PH02	23364692	Jack, Phono(2180TD)
⚠S801	23145434	Switch, Power, 2C2P
SA01	23145430	Switch, Push, 1C1P
SA02	23145430	Switch, Push, 1C1P
SA03	23145430	Switch, Push, 1C1P
SA04	23145430	Switch, Push, 1C1P
⚠V901A	23902022	Socket, CRT, 8P (2181TB)
⚠V901A	23902891	Socket, CRT(2180TD)
W661	23351079	Speaker, SPK-1351, 77x77mm, 16 ohm
X501	23153979	Crystal, 4.43MHz
XA01	23153930	Crystal, 12.0MHz
Z102	23303135	Filter, 39.5M, OFWJ1951M (2181TB)
Z102	23303134	Filter, OFWJ1962M (2180TD)
Z103	23107855	Filter, TCF1031 (2180TD)
Z104	23107948	Ceramic Filter, 6.0MHz, SFE6.0MBF
Z105	23107926	Ceramic Video Trap, 6.0MHz, TCF1012 (2181TB)
Z105	23107927	Filter, TCF1011 (2180TD)
Z601	23107744	Filter, TEM1012 (2180TD)
Z602	23107744	Filter, TEM1012 (2180TD)
ZP30	23144599	Protector, 125V, 0.63A
ZP80	23144539	Protector, PRF20005491, 125V, 2A
ZT01	23153736	Ceramic Resonator, TCR1025

PC BOARD ASSEMBLIES

✻U902A	23781772	Signal Board, PB8020A-1 (2181TB)
✻U902A	23782028	Signal Board, PB8020B-1 (2180TD)
✻U902B	23781773	CRT Drive Board, PB8020A-2 (2181TB)
✻U902B	23782029	CRT Drive Board, PB8020B-2 (2180TD)

PICTURE TUBE

⚠V901	23312726	Picture Tube, A51EFS83X69

TUNER

H001	23321205	Tuner, UF813BX1(2181TB)
H001	23321279	Tuner, EGA13X2(2180TD)

ACCESSORIES

K902	23120324	Remote Hand Unit, CT-9689 (2181TB)
K902	23306084	Remote Hand Unit, CT-9784 (2180TD)
AT03	23305085	Battery Cover
Y101	23563322	Owner's Manual, English, 2181TB
Y101	23563315	Owner's Manual, English, 2180TD
Y102	23563317	Owner's Manual, Italian, 2180TD

Location No.	Part No.	Description
CABINET PARTS		
A201	23410402	Front Cover (2181TB)
A201	23410243	Front Cover (2180TD)
A218	23421601	Rail (L)
A231	23443831	Button, Power
A242	23425837	Door (2180TD)
⚠A401	23426841	Back Cover
A411	23560990	Label, Model No. (2181TB)
A411	23550052	Label, Model No. (2180TD)
A501	23030187	Screw, CRT5x30BLUNT
A701	23525590	Case (2181TB)
A701	23525621	Case (2180TD)
A702	23935243	Packing, Bottom

Location No.	Part No.	Description

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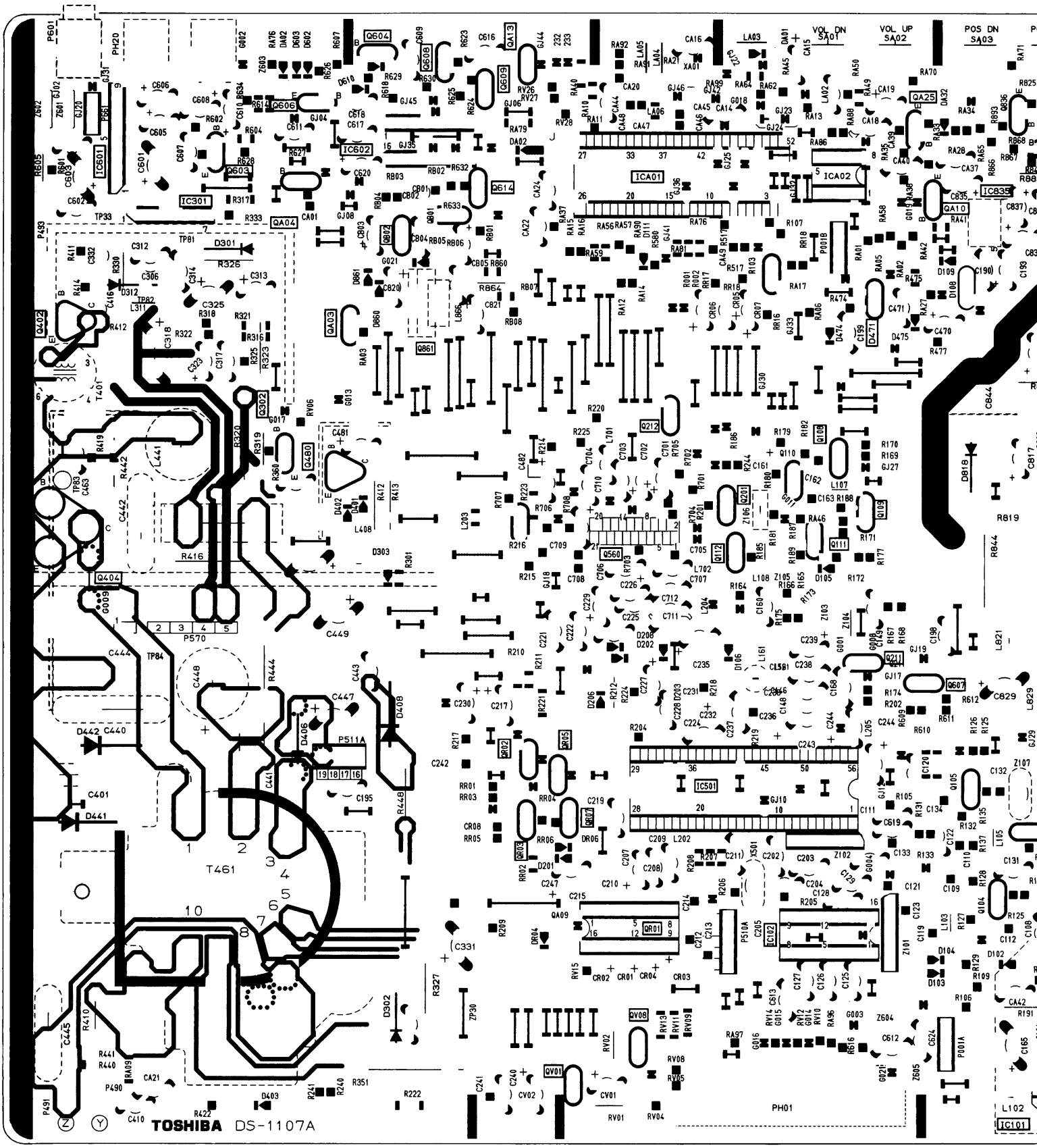
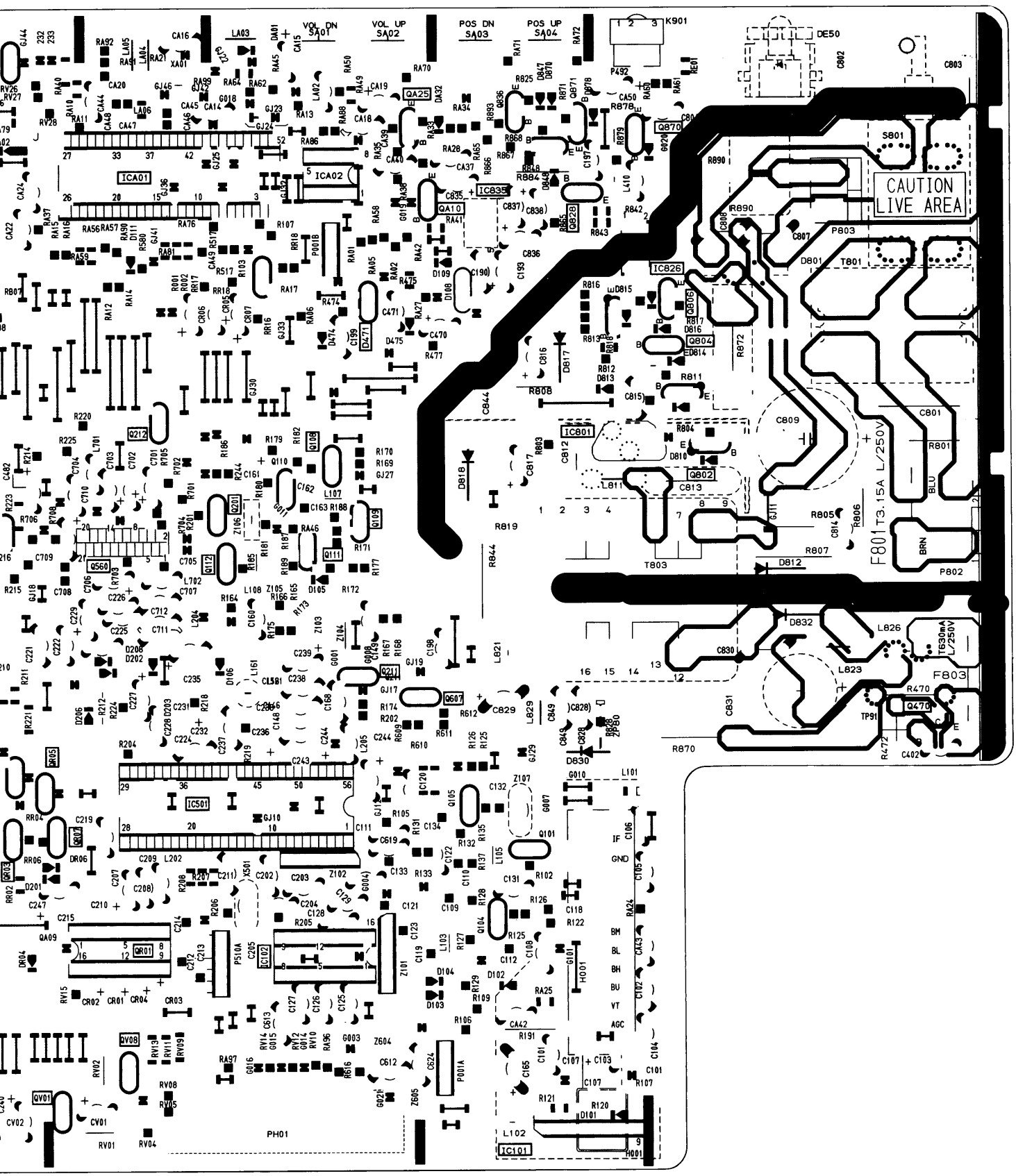
MAIN BOARD PB8020A-1

BOTTOM (FOIL) SIDE



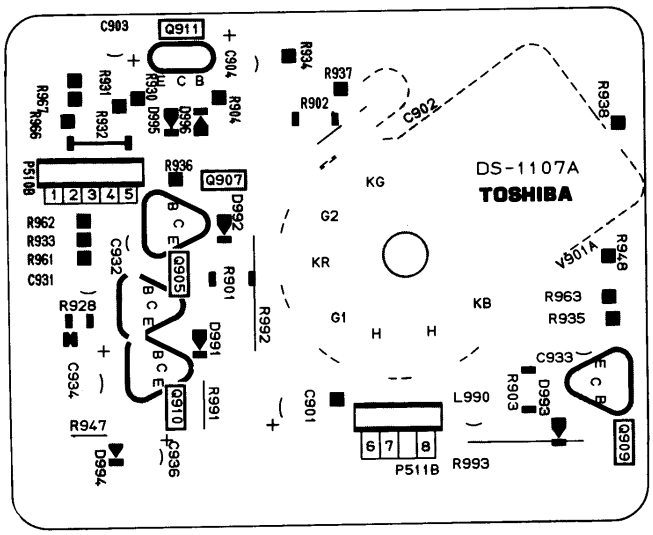
MAIN BOARD PB8020A-1

BOTTOM (FOIL) SIDE



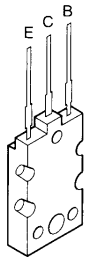
CRT/D BOARD PB8020A-2

BOTTOM (FOIL) SIDE

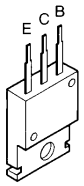


TERMINAL VIEW OF TRANSISTORS

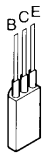
① 2SD2253
(old)
2SC5243



② 2SC3852
2SD1763A
2SC1569
2SC4544
2SA1788
2SA1306
2SA1186A

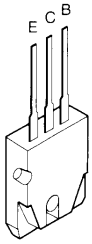


③ 2SC752GTM
2SC2482
2SC2655
2SC4721P

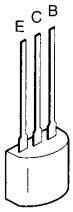


④ 2SC752
2SA562TM
2SA1015
2SC1815
2SC2878
2SC1740S
2SC2120
2SA9335

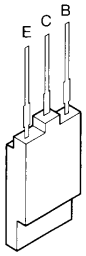
⑤ 2SA1788



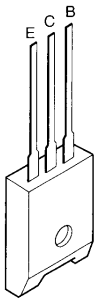
⑥ RN2203
RN2201
RN2004
RN1203
RN1204
RN2204
RN1205
RN1202
RN1201



⑦ 2SD1554
2SD2253
2SD1556
2SC5143



⑧ ON4409



SPECIFICATIONS (Representative : 2181TB)	
Input Power Rating:	73 watts(Approx), AC 220~240 volts, 50 Hz
Aerial Input Inpedanse:	75 ohm unbalanced type for UHF
Receving Channels:	PAL-I Standard:
	UHF ..... channels 21 to 69
Intermediate Frequencies:	Picture I-F carrier frequency ..... 39.5 MHz
	Sound I-F carrier frequency ..... 33.5 MHz
	Colour sub-carrier frequency ..... 35.07 MHz
Picture Tube	21 inches, 510 mm (measured on diagonal of viewable picture area), 90° deflection
Sound Output:	1.5 watts (at 10% harmonic distortion) x 1
Speakers:	77mm round 1 pc
Dimensions:	Height ..... 476 mm
	Width ..... 530 mm
	Depth ..... 485 mm
Mass:	19.7 kg

Specifications are subject to change without notice.

TOSHIBA CORPORATION
1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-01, JAPAN

SCHEMATIC DIAGRAM MODEL : 2181TB / 2180TD (1/2)

030-9806

CAUTION: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 3. Do not degrade the safety of the receiver through improper servicing.

OBSERVATION OF VOLTAGES AND WAVEFORMS

1. Voltages read with VTVM from point shown to chassis ground, line voltage 220 volts, colour bar signal. Voltages reading may vary ±20%.
2. All waveforms are taken using a wide band oscilloscope and a low capacity probe.
3. Waveforms are taken using a standard colour bar signal.
4. Make sure that CONTRAST and COLOUR controls are in mid position and BRIGHTNESS control is almost in maximum position. Set other controls for best picture.

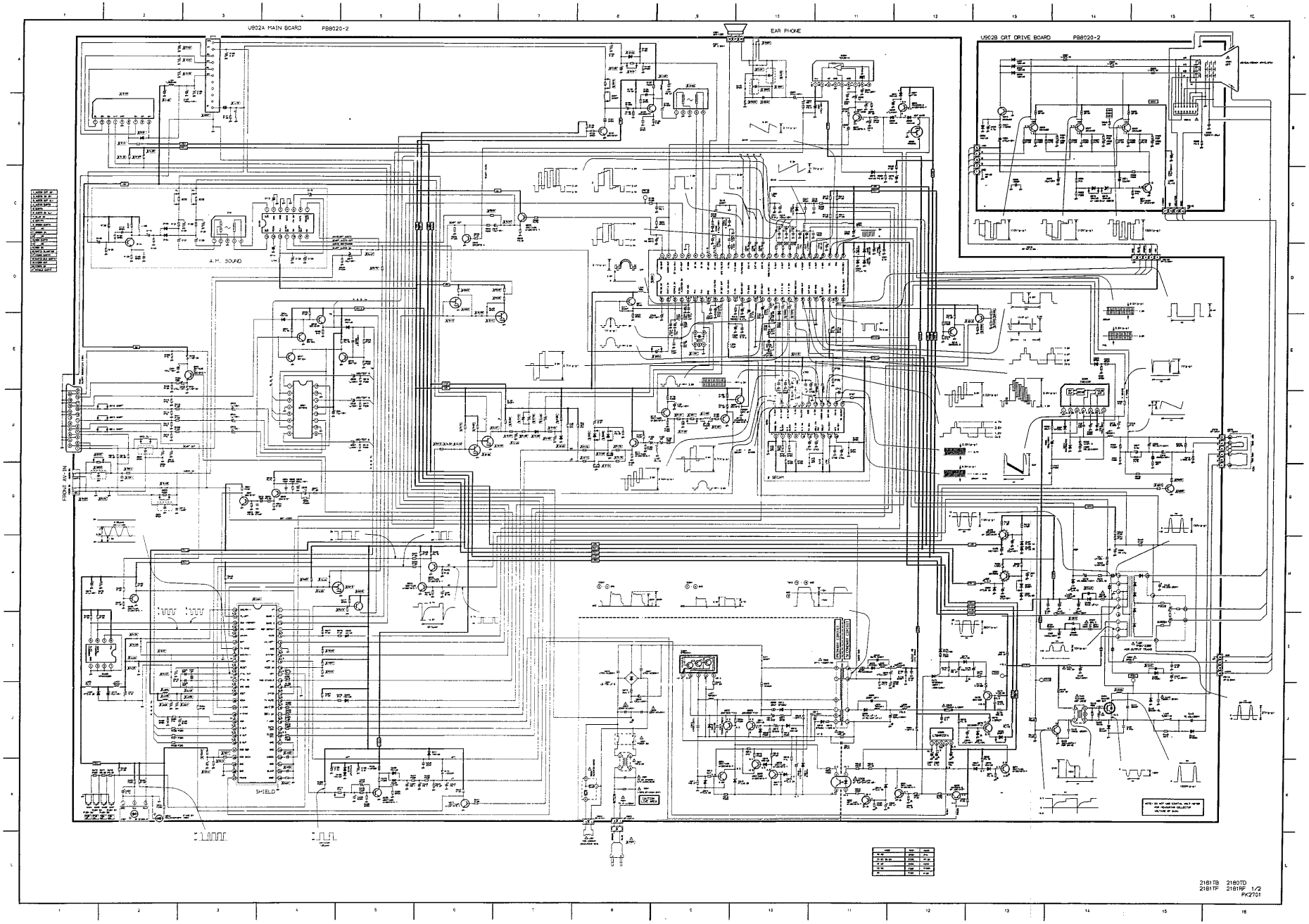
NOTES:

1. D.C. resistance value of a principal transformer is shown in this schematic diagram. These are measured for separated from the circuit.
2. The circuits are subject to change without notice.
3. ⬬ : Solder links.

EXPRESSION

VALUE OF RESISTOR, CAPACITOR and INDUCTOR

1. Resistance is shown in ohm, k=1,000, M=1,000,000
2. Unless other wise noted in schematic, all capacitor values less than 1 are expressed in μF and the values more than 1 in pF.
3. Unless otherwise noted in schematic, all inductor values more than 1 are expressed in μH, and the values less than 1 in H.



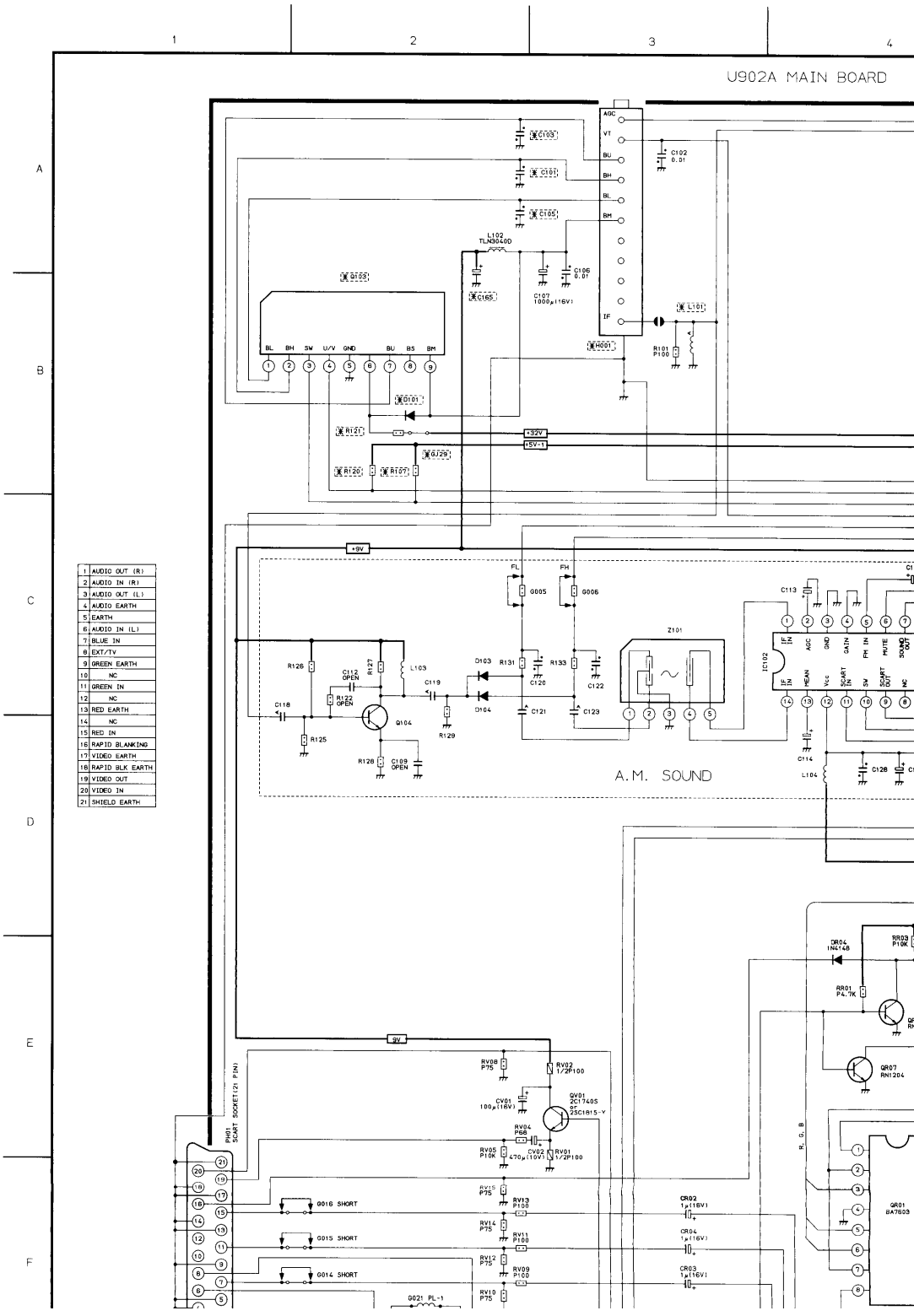
SCHEMATIC DIAGRAM MODEL : 2181TB / 2180TD (1/2)

030-9806

CAUTION: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 3. Do not degrade the safety of the receiver through improper servicing.

OBSERVA

1. Voltage volts, c
2. All wav
3. Wavefo
4. Make s BRIGHT picture



/2)

o

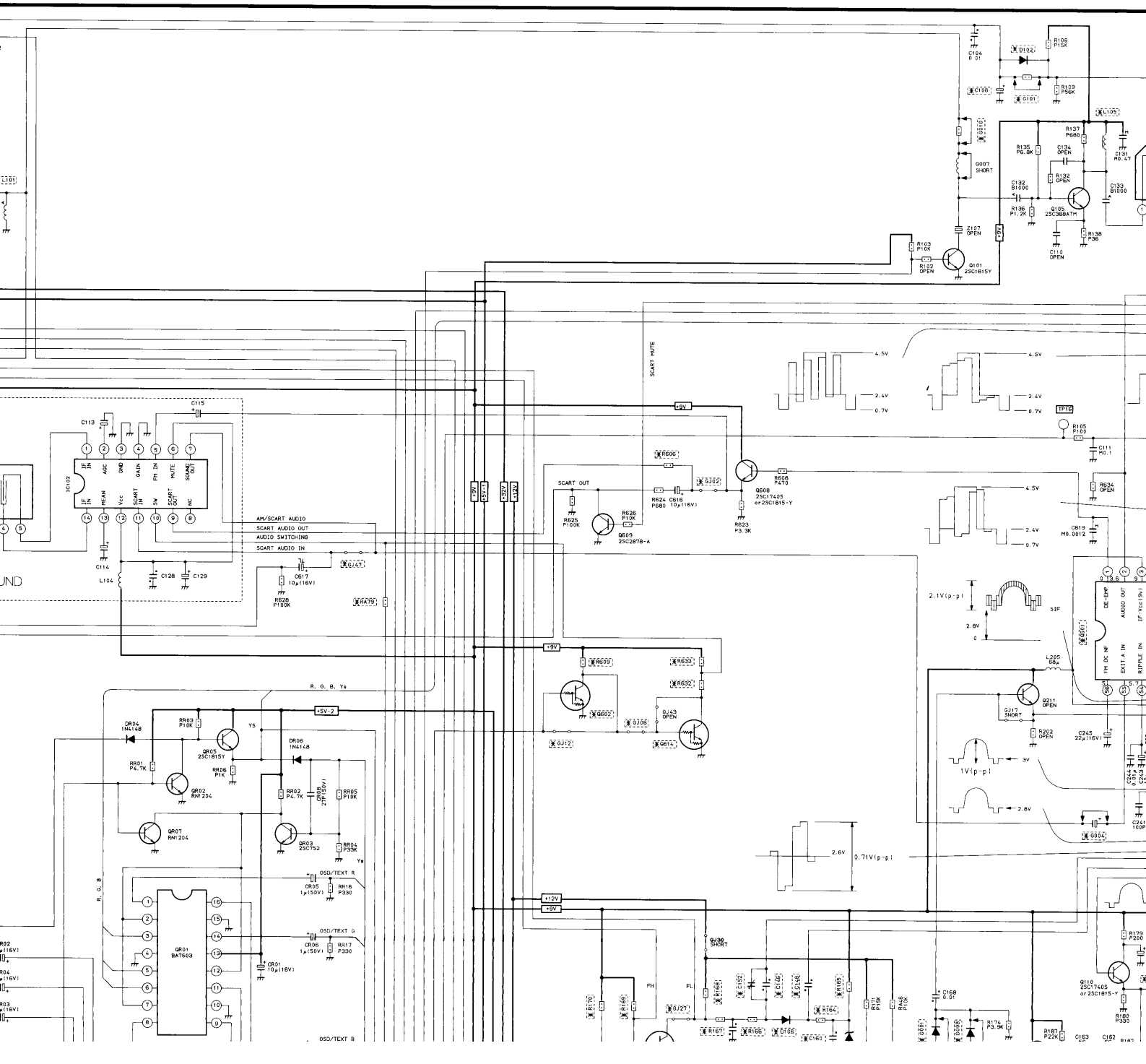
ge

OBSERVATION OF VOLTAGES AND WAVEFORMS

1. Voltages read with VTVM from point shown to chassis ground, line voltage 220 volts, colour bar signal. Voltages reading may vary ±20%.
2. All waveforms are taken using a wide band oscilloscope and a low capacity probe.
3. Waveforms are taken using a standard colour bar signal.
4. Make sure that CONTRAST and COLOUR controls are in mid position and BRIGHTNESS control is almost in maximum position. Set other controls for best picture.

NOTES:

1. D.C. resistance value of a
   gram. These are measured
2. The circuits are subject to
3. ● : Solder links.

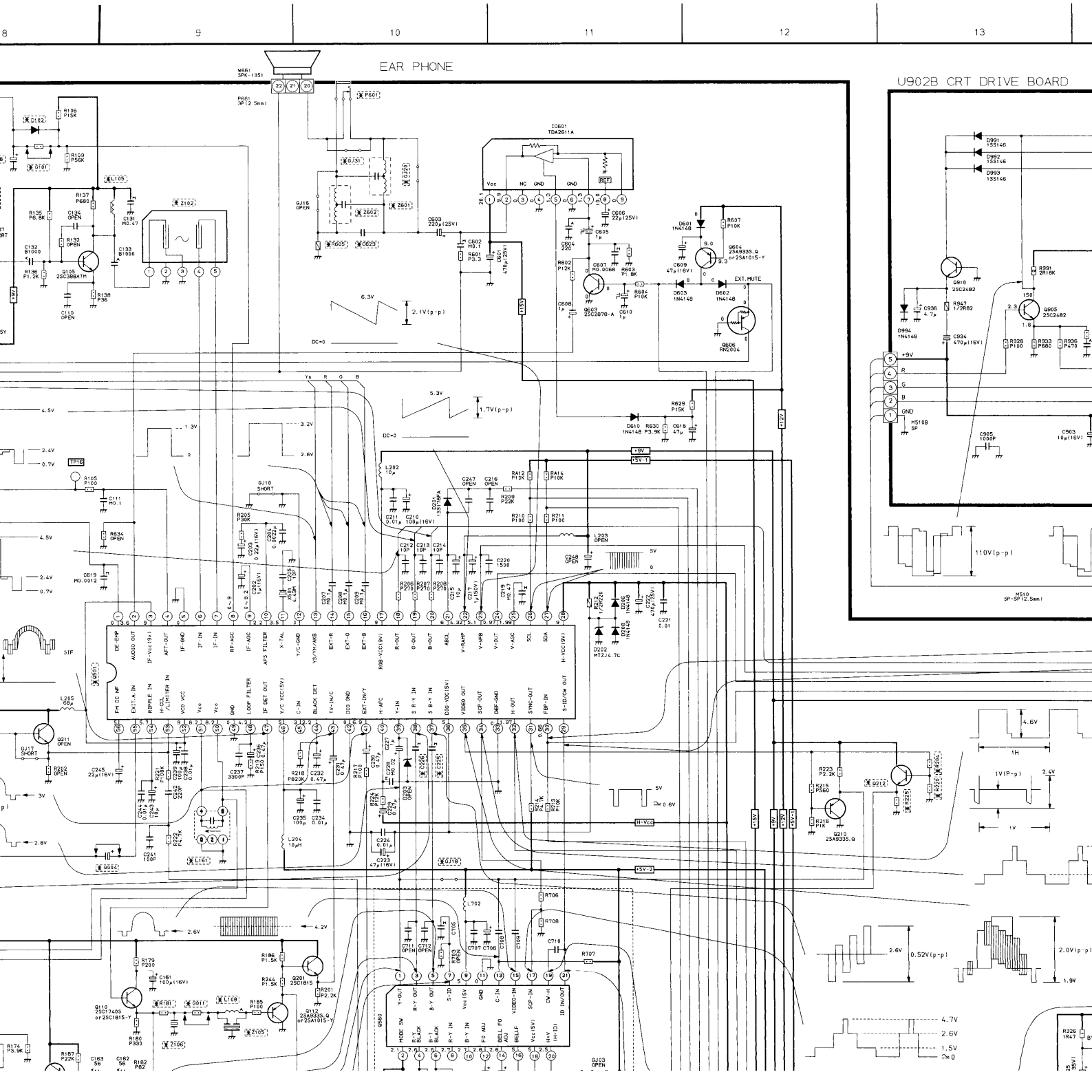


EXPRESSION

VALUE OF RESISTOR, CAPACITOR and INDUCT

1. Resistance is shown in ohm, k=1,000, M=1,000,000
2. Unless other wise noted in schematic, all capacitor
   sed in μF and the values more than 1 in pF.
3. Unless otherwise noted in schematic, all inductor v
   sed in μH, and the values less than 1 in H.

resistance value of a principal transformer is shown in this schematic dia-
These are measured for separated from the circuit.
ircuits are subject to change without notice.
: Solder links.



TOR, CAPACITOR and INDUCTOR

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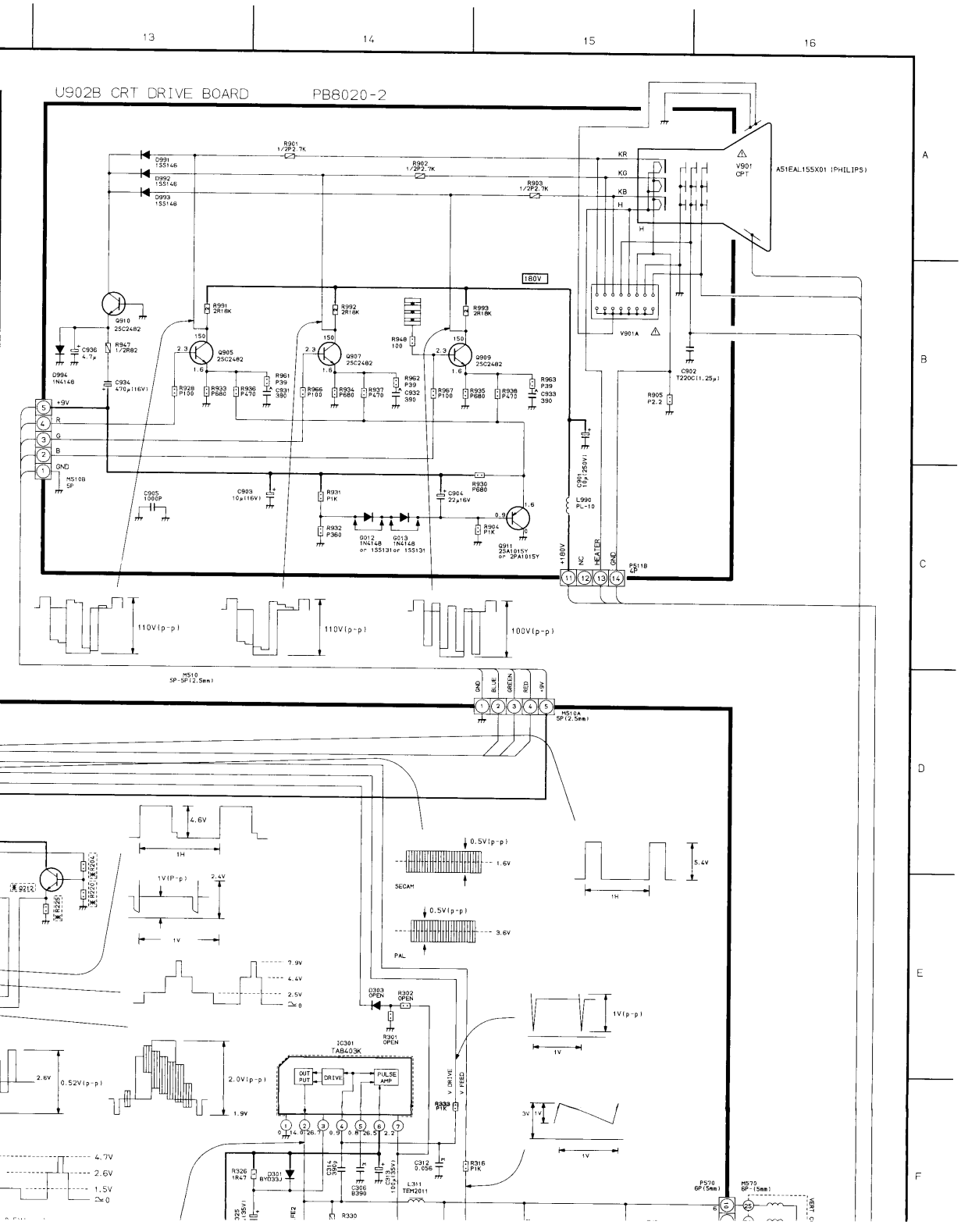
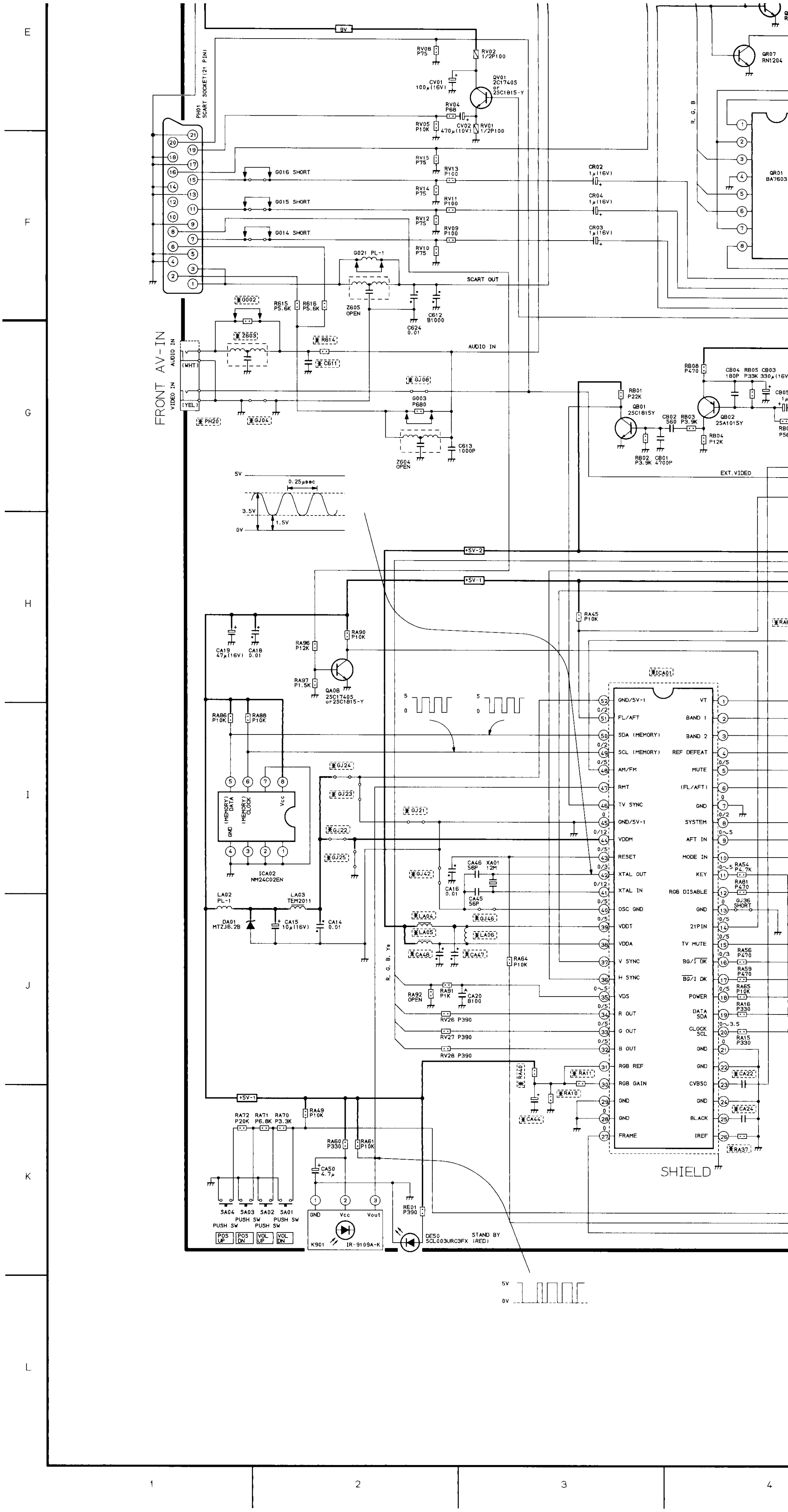
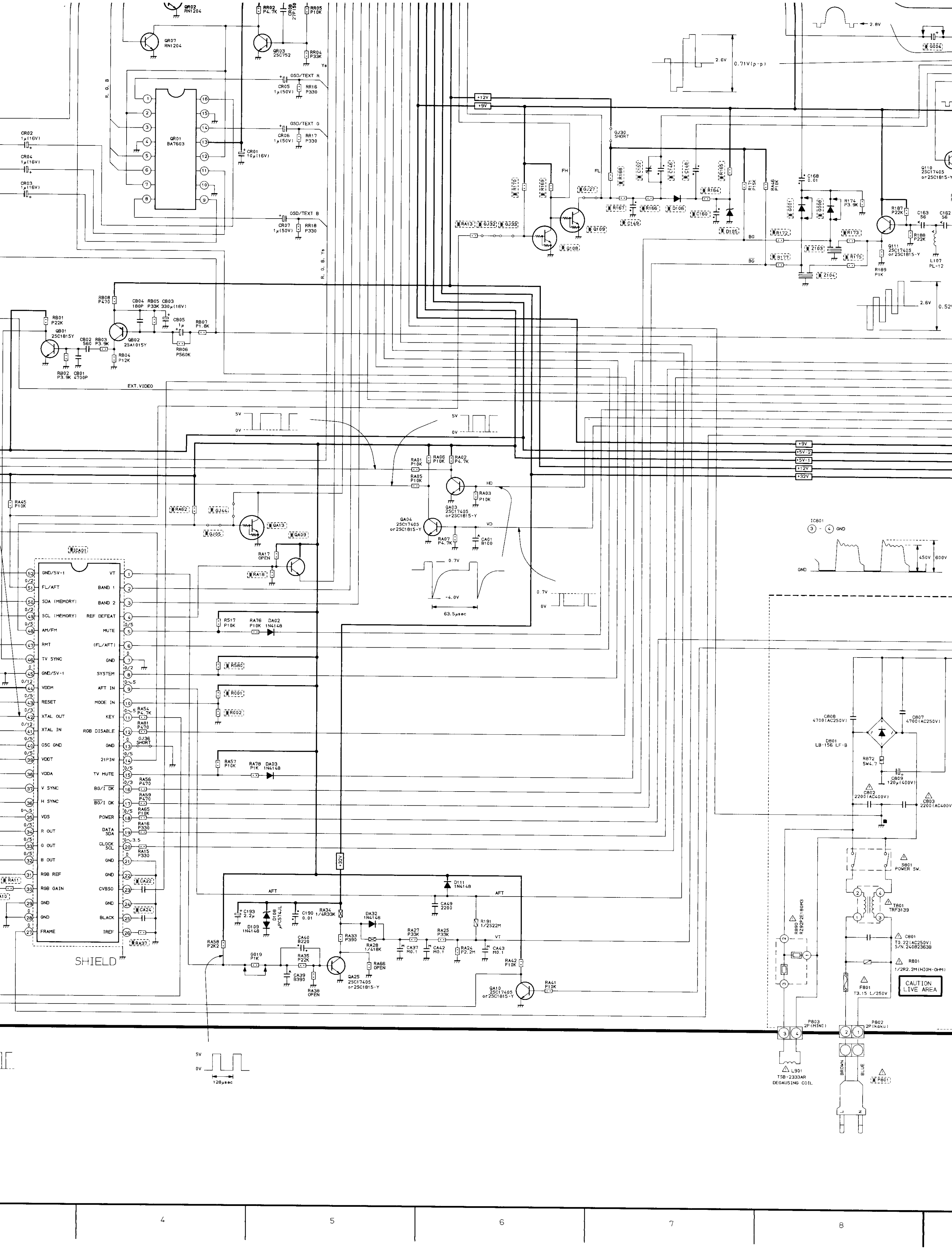
e noted in schematic, all capacitor values less than 1 are expres-
values more than 1 in pF.
noted in schematic, all inductor values more than 1 are expres-
e values less than 1 in H.

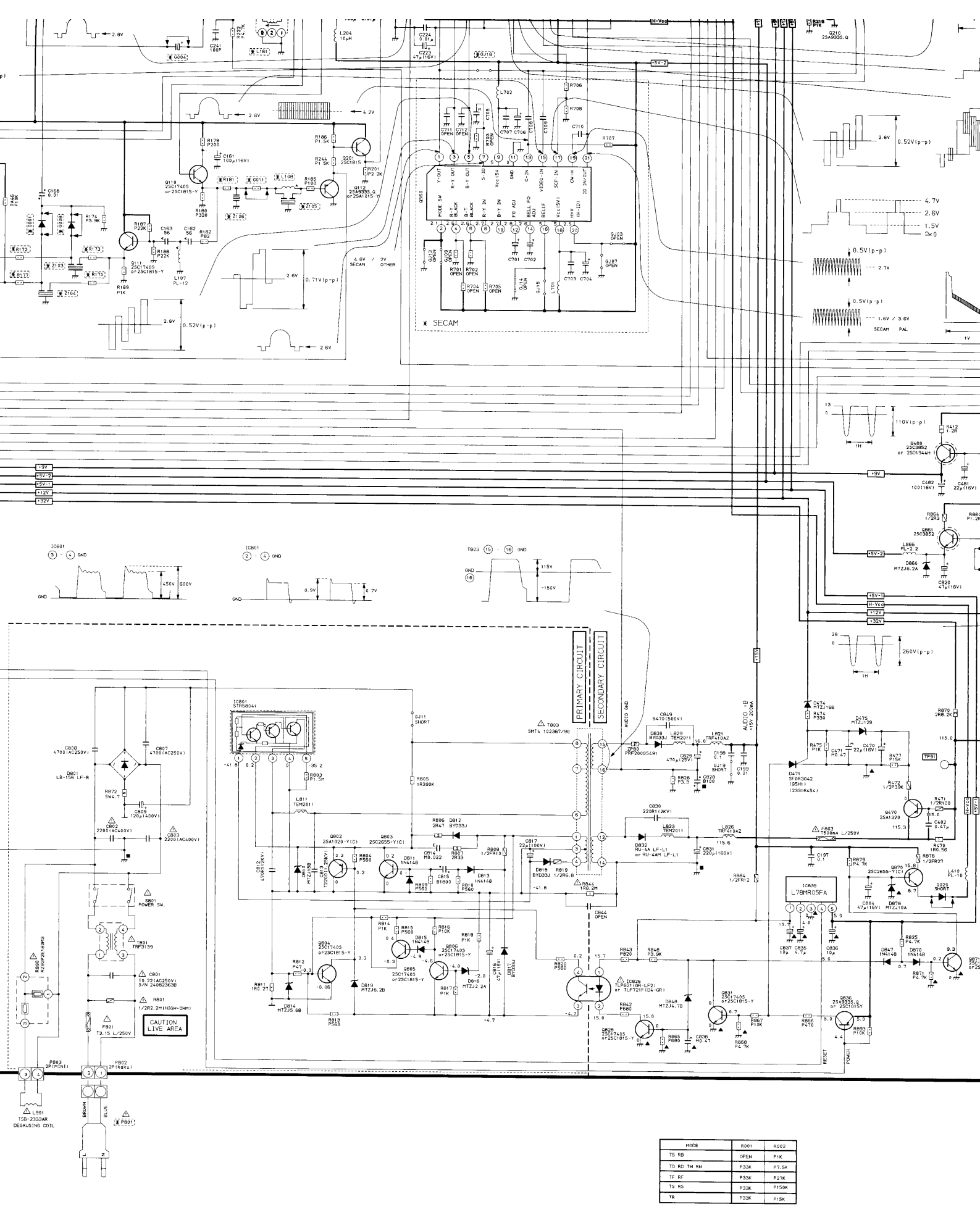




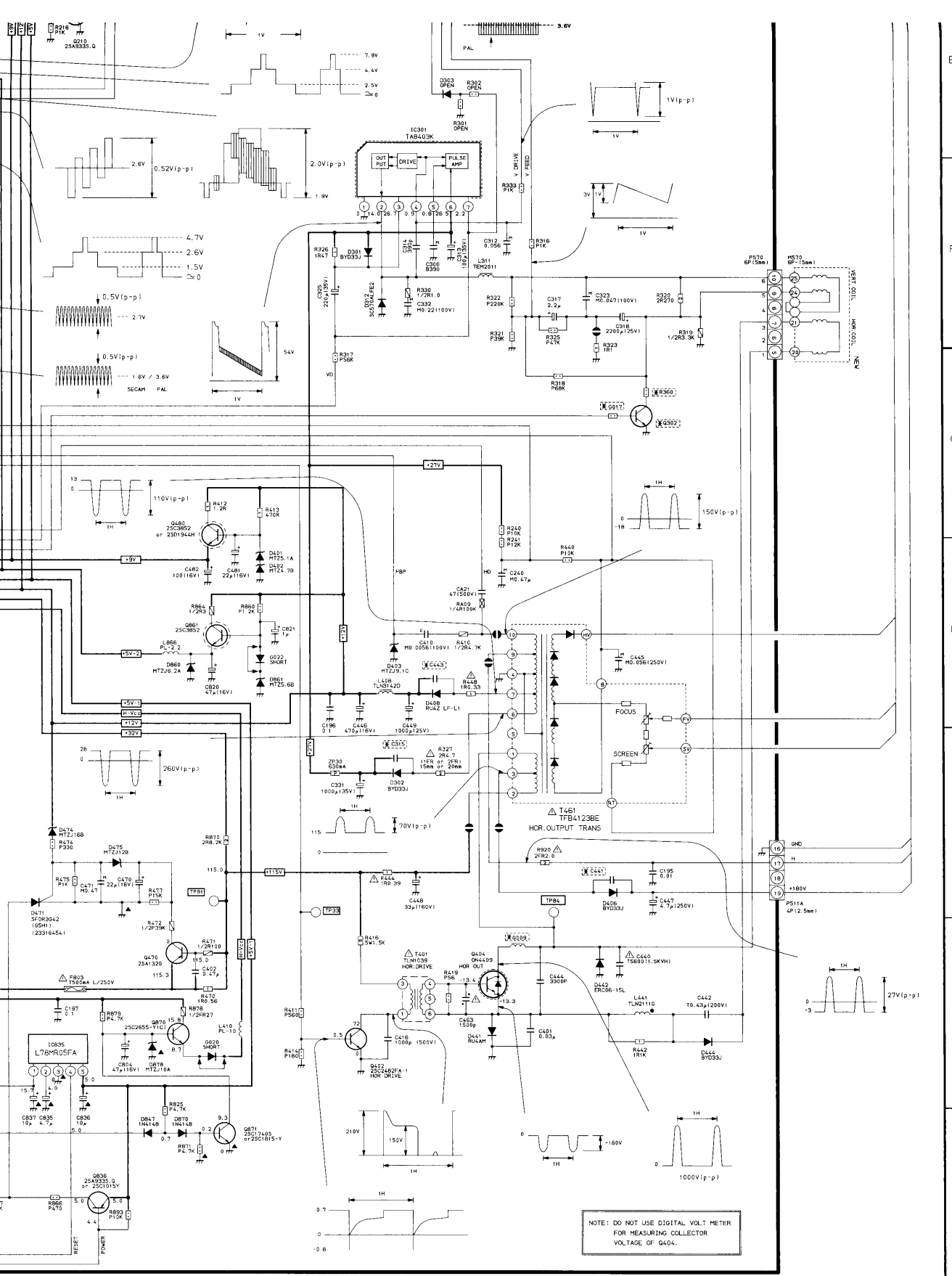
E
F
G
H
I
J
K
L
1
2
3
4
PH01 SCART SOCKET(21 PIN)
FRONT AV-IN
AUDIO IN
VIDEO IN
(WHT)
(YEL)
G016 SHORT
G015 SHORT
G014 SHORT
G021 PL-1
SCART OUT
AUDIO IN
EXT.VIDEO
Z605 OPEN
Z604 OPEN
C624 0.01
C612 B1000
C613 1000P
G003 P680
R615 P5.6K
R616 P5.6K
RV08 P75
RV02 1/2P100
CV01 100μ(16V)
QV01 2C1740S or 2SC1815-Y
RV04 P68
RV05 P10K
CV02 470μ(10V)
RV01 1/2P100
RV15 P75
RV13 P100
RV14 P75
RV11 P100
RV12 P75
RV09 P100
RV10 P75
CR02 1μ(16V)
CR04 1μ(16V)
CR03 1μ(16V)
QR07 RN1204
QR01 BA7603
R. G. B
RB08 P470
CB04 180P
RB05 P33K
CB03 330μ(16V)
RB01 P22K
QB01 2SC1815Y
CB02 560
RB03 P3.9K
QB02 2SA1015Y
RB04 P12K
RB02 P3.9K
CB01 4700P
5V
0.25μsec
3.5V
1.5V
0V
+5V-2
+5V-1
RA45 P10K
RA90 P10K
RA96 P12K
RA97 P1.5K
QA08 2SC1740S or2SC1815-Y
CA19 47μ(16V)
CA18 0.01
RA86 P10K
RA88 P10K
(MEMORY) DATA
(MEMORY) CLOCK
Vcc
GND
ICA02 NM24C02EN
LA02 PL-1
LA03 TEM2011
DA01 MTZJ6.2B
CA15 10μ(16V)
CA14 0.01
ICA01
GND/5V-1
FL/AFT
SDA (MEMORY)
SCL (MEMORY)
AM/FM
RMT
TV SYNC
VDDM
RESET
XTAL OUT
XTAL IN
OSC GND
VDDT
VDDA
V SYNC
H SYNC
VDS
R OUT
G OUT
B OUT
RGB REF
RGB GAIN
FRAME
VT
BAND 1
BAND 2
REF DEFEAT
MUTE
(FL/AFT)
SYSTEM
AFT IN
MODE IN
KEY
RGB DISABLE
21PIN
TV MUTE
POWER
DATA SDA
CLOCK SCL
CVBSO
BLACK
IREF
CA46 56P
XA01 12M
CA16 0.01
CA45 56P
RA64 P10K
RA92 OPEN
RA91 P1K
CA20 B100
RV26 P390
RV27 P390
RV28 P390
R. G. B. Ys
RA54 P4.7K
RA81 P470
GJ36 SHORT
RA56 P470
RA59 P470
RA65 P10K
RA16 P330
RA15 P330
SHIELD
RA49 P10K
RA72 P20K
RA71 P6.8K
RA70 P3.3K
RA60 P330
RA61 P10K
CA50 4.7μ
RE01 P390
DE50 SCL003URC3FX
STAND BY (RED)
K901
IR-9109A-K
Vout
SA04
SA03
SA02
SA01
PUSH SW
P05 UP
P05 DN
VOL UP
VOL DN



QR02 RN1204
QR07 RN1204
QR03 2SC752
RR02 P4.7K
RR05 P10K
RR04 P33K
QR01 BA7603
CR01 10μ(16V)
CR02 1μ(16V)
CR04 1μ(16V)
CR03 1μ(16V)
OSD/TEXT R
OSD/TEXT G
OSD/TEXT B
CR05 1μ(50V)
CR06 1μ(50V)
CR07 1μ(50V)
RR16 P330
RR17 P330
RR18 P330
+12V
+9V
GJ30 SHORT
FH
FL
C168 0.01
R174 P3.9K
Q110 2SC1740S or 2SC1815-Y
Q111 2SC1740S or 2SC1815-Y
R187 P22K
R188 P22K
R189 P1K
L107 PL-12
2.6V
0.71V(p-p)
2.8V
0.52V
RB08 P470
RB01 P22K
QB01 2SC1815Y
QB02 2SA1015Y
CB04 180P
RB05 P33K
CB03 330μ(16V)
CB05 1μ
RB07 P1.8K
RB06 P560K
CB02 560
RB03 P3.9K
RB04 P12K
RB02 P3.9K
CB01 4700P
EXT.VIDEO
5V
0V
RA01 P10K
RA06 P10K
RA02 P4.7K
RA05 P10K
RA03 P10K
QA03 2SC1740S or 2SC1815-Y
QA04 2SC1740S or 2SC1815-Y
RA07 P4.7K
CA01 B100
HD
VD
0.7V
-4.0V
63.5μsec
+9V
+5V-2
+5V-1
+12V
+32V
IC801
GND
450V
600V
RA45 P10K
RA17 OPEN
GND/5V-1
FL/AFT
SDA (MEMORY)
SCL (MEMORY)
AM/FM
RMT
TV SYNC
GND/5V-1
VDDM
RESET
XTAL OUT
XTAL IN
OSC GND
VDDT
VDDA
V SYNC
H SYNC
VDS
R OUT
G OUT
B OUT
RGB REF
RGB GAIN
GND
GND
FRAME
VT
BAND 1
BAND 2
REF DEFEAT
MUTE
(FL/AFT)
GND
SYSTEM
AFT IN
MODE IN
KEY
RGB DISABLE
GND
21PIN
TV MUTE
BG/I DK
BG/I DK
POWER
DATA SDA
CLOCK SCL
GND
GND
CVBS0
GND
BLACK
IREF
SHIELD
R517 P10K
RA76 P10K
DA02 1N4148
RA57 P10K
RA78 P1K
DA03 1N4148
RA54 P4.7K
RA81 P470
GJ36 SHORT
RA56 P470
RA59 P470
RA65 P10K
RA16 P330
RA15 P330
AFT
D111 1N4148
CA49 2200
C193 2.2μ
D108 μPC574JL
D109 1N4148
C190 0.01
RA34 1/4R33K
DA32 1N4148
RA33 P390
RA28 1/4 18K
RA27 P33K
RA25 P33K
CA37 M0.1
CA42 M0.1
RA24 P2.2M
CA43 M0.1
R191 1/2S22M
RA58 P2K2
G019 P1K
CA40 8220
RA35 P22K
CA39 B390
RA38 OPEN
QA25 2SC1740S or 2SC1815-Y
RA66 OPEN
RA42 P10K
QA10 2SC1740S or 2SC1815-Y
RA41 P10K
128μsec
C808 4700(AC250V)
C807 4700(AC250V)
D801 LB-156 LF-B
R872 5W4.7
C809 120μ(400V)
C802 2200(AC400V)
C803 2200(AC400V)
S801 POWER SW.
T801 TRF3139
C801 T0.22(AC250V) S/N.240B2363B
R801 1/2R2.2M(HIGH-OHM)
F801 T3.15 L/250V
CAUTION LIVE AREA
P803 2P(MINI)
P802 2P(kaku)
L901 TSB-2333AR DEGAUSING COIL
BROWN
BLUE
4
5
6
7
8



MODE	R001	R002
TB RB	OPEN	P1K
TD RD TN RN	P33K	P7.5K
TF RF	P33K	P27K
TS RS	P33K	P150K
TR	P33K	P15K



R002
P1K
P7.5K
P27K
P150K
P15K

2181TB 2180TD
2181TF 2181RF 1/2
PK2701

SCHEMATIC DIAGRAM MODEL : 2181TB / 2180TD (2/2)

030-9806

CAUTION: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 3. Do not degrade the safety of the receiver through improper servicing.

OBSERVATION OF VOLTAGES AND WAVEFORMS

1. Voltages read with VTVM from point shown to chassis ground, line voltage 220 volts, colour bar signal. Voltages reading may vary ±20%.
2. All waveforms are taken using a wide band oscilloscope and a low capacity probe.
3. Waveforms are taken using a standard colour bar signal.
4. Make sure that CONTRAST and COLOUR controls are in mid position and BRIGHTNESS control is almost in maximum position. Set other controls for best picture.

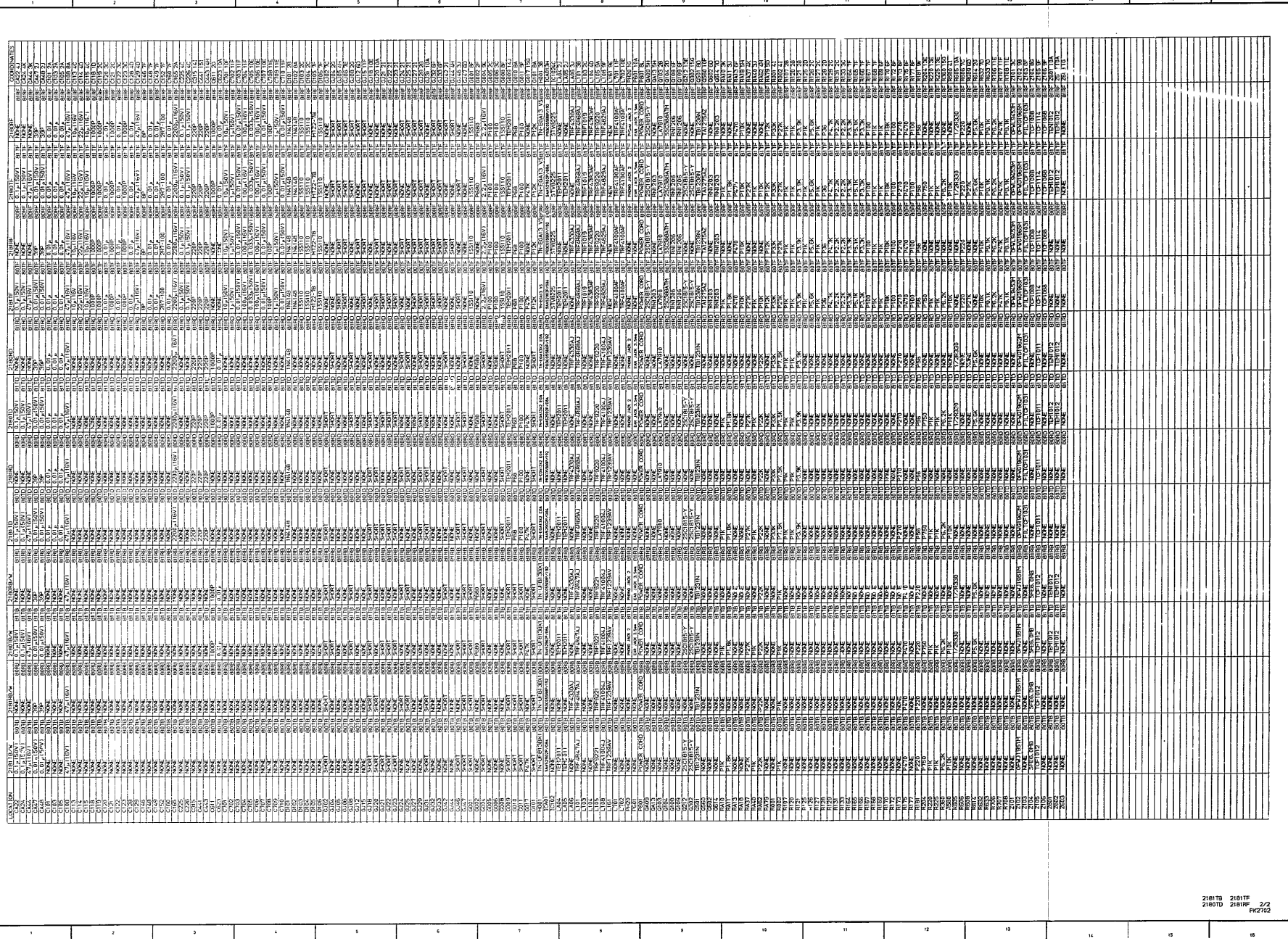
NOTES:

1. D.C. resistance value of a principal transformer is shown in this schematic diagram. These are measured for separated from the circuit.
2. The circuits are subject to change without notice.
3. ⬙ : Solder links.

EXPRESSION

VALUE OF RESISTOR, CAPACITOR and INDUCTOR

1. Resistance is shown in ohm, k=1,000, M=1,000,000
2. Unless other wise noted in schematic, all capacitor values less than 1 are expressed in μF and the values more than 1 in pF.
3. Unless otherwise noted in schematic, all inductor values more than 1 are expressed in μH, and the values less than 1 in H.



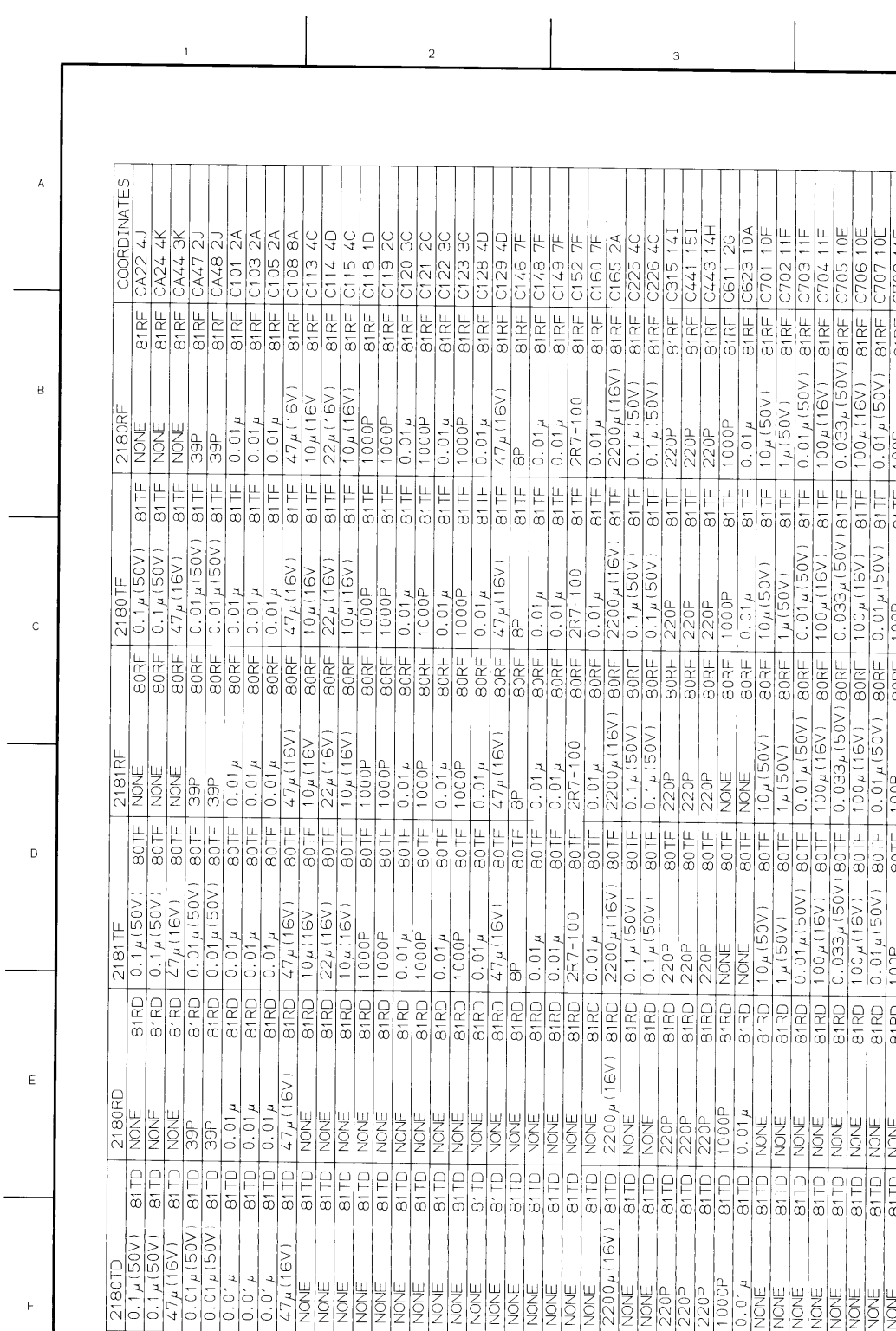
2181TB 2181TF
2180TD 2181RF 2/2
PK2702

SCHEMATIC DIAGRAM MODEL : 2181TB / 2180TD (2/2)

030-9806

CAUTION: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 3. Do not degrade the safety of the receiver through improper servicing.

OBS
1. V
2. A
3. W
4. M
B
p



	2180TD		2180RD		2181TF		2181RF		2180TF		2180RF		COORDINATES
D	0.1μ(50V)	81TD	NONE	81RD	0.1μ(50V)	80TF	NONE	80RF	0.1μ(50V)	81TF	NONE	81RF	CA22 4J
D	0.1μ(50V)	81TD	NONE	81RD	0.1μ(50V)	80TF	NONE	80RF	0.1μ(50V)	81TF	NONE	81RF	CA24 4K
D	47μ(16V)	81TD	NONE	81RD	47μ(16V)	80TF	NONE	80RF	47μ(16V)	81TF	NONE	81RF	CA44 3K
D	0.01μ(50V)	81TD	39P	81RD	0.01μ(50V)	80TF	39P	80RF	0.01μ(50V)	81TF	39P	81RF	CA47 2J
D	0.01μ(50V)	81TD	39P	81RD	0.01μ(50V)	80TF	39P	80RF	0.01μ(50V)	81TF	39P	81RF	CA48 2J
D	0.01μ	81TD	0.01μ	81RD	0.01μ	80TF	0.01μ	80RF	0.01μ	81TF	0.01μ	81RF	C101 2A
D	0.01μ	81TD	0.01μ	81RD	0.01μ	80TF	0.01μ	80RF	0.01μ	81TF	0.01μ	81RF	C103 2A
D	0.01μ	81TD	0.01μ	81RD	0.01μ	80TF	0.01μ	80RF	0.01μ	81TF	0.01μ	81RF	C105 2A
D	47μ(16V)	81TD	47μ(16V)	81RD	47μ(16V)	80TF	47μ(16V)	80RF	47μ(16V)	81TF	47μ(16V)	81RF	C108 8A
D	NONE	81TD	NONE	81RD	10μ(16V	80TF	10μ(16V	80RF	10μ(16V	81TF	10μ(16V	81RF	C113 4C
D	NONE	81TD	NONE	81RD	22μ(16V)	80TF	22μ(16V)	80RF	22μ(16V)	81TF	22μ(16V)	81RF	C114 4D
D	NONE	81TD	NONE	81RD	10μ(16V)	80TF	10μ(16V)	80RF	10μ(16V)	81TF	10μ(16V)	81RF	C115 4C
D	NONE	81TD	NONE	81RD	1000P	80TF	1000P	80RF	1000P	81TF	1000P	81RF	C118 1D
D	NONE	81TD	NONE	81RD	1000P	80TF	1000P	80RF	1000P	81TF	1000P	81RF	C119 2C
D	NONE	81TD	NONE	81RD	0.01μ	80TF	0.01μ	80RF	0.01μ	81TF	0.01μ	81RF	C120 3C
D	NONE	81TD	NONE	81RD	1000P	80TF	1000P	80RF	1000P	81TF	1000P	81RF	C121 2C
D	NONE	81TD	NONE	81RD	0.01μ	80TF	0.01μ	80RF	0.01μ	81TF	0.01μ	81RF	C122 3C
D	NONE	81TD	NONE	81RD	1000P	80TF	1000P	80RF	1000P	81TF	1000P	81RF	C123 3C
D	NONE	81TD	NONE	81RD	0.01μ	80TF	0.01μ	80RF	0.01μ	81TF	0.01μ	81RF	C128 4D
D	NONE	81TD	NONE	81RD	47μ(16V)	80TF	47μ(16V)	80RF	47μ(16V)	81TF	47μ(16V)	81RF	C129 4D
D	NONE	81TD	NONE	81RD	8P	80TF	8P	80RF	8P	81TF	8P	81RF	C146 7F
D	NONE	81TD	NONE	81RD	0.01μ	80TF	0.01μ	80RF	0.01μ	81TF	0.01μ	81RF	C148 7F
D	NONE	81TD	NONE	81RD	0.01μ	80TF	0.01μ	80RF	0.01μ	81TF	0.01μ	81RF	C149 7F
D	NONE	81TD	NONE	81RD	2R7-100	80TF	2R7-100	80RF	2R7-100	81TF	2R7-100	81RF	C152 7F
D	NONE	81TD	NONE	81RD	0.01μ	80TF	0.01μ	80RF	0.01μ	81TF	0.01μ	81RF	C160 7F
D	2200μ(16V)	81TD	2200μ(16V)	81RD	2200μ(16V)	80TF	2200μ(16V)	80RF	2200μ(16V)	81TF	2200μ(16V)	81RF	C165 2A
D	NONE	81TD	NONE	81RD	0.1μ(50V)	80TF	0.1μ(50V)	80RF	0.1μ(50V)	81TF	0.1μ(50V)	81RF	C225 4C
D	NONE	81TD	NONE	81RD	0.1μ(50V)	80TF	0.1μ(50V)	80RF	0.1μ(50V)	81TF	0.1μ(50V)	81RF	C226 4C
D	220P	81TD	220P	81RD	220P	80TF	220P	80RF	220P	81TF	220P	81RF	C315 14I
D	220P	81TD	220P	81RD	220P	80TF	220P	80RF	220P	81TF	220P	81RF	C441 15I
D	220P	81TD	220P	81RD	220P	80TF	220P	80RF	220P	81TF	220P	81RF	C443 14H
D	1000P	81TD	NONE	81RD	NONE	80TF	NONE	80RF	1000P	81TF	1000P	81RF	C611 2G
D	0.01μ	81TD	0.01μ	81RD	NONE	80TF	NONE	80RF	0.01μ	81TF	0.01μ	81RF	C623 10A
D	NONE	81TD	NONE	81RD	10μ(50V)	80TF	10μ(50V)	80RF	10μ(50V)	81TF	10μ(50V)	81RF	C701 10F
D	NONE	81TD	NONE	81RD	1μ(50V)	80TF	1μ(50V)	80RF	1μ(50V)	81TF	1μ(50V)	81RF	C702 11F
D	NONE	81TD	NONE	81RD	0.01μ(50V)	80TF	0.01μ(50V)	80RF	0.01μ(50V)	81TF	0.01μ(50V)	81RF	C703 11F
D	NONE	81TD	NONE	81RD	100μ(16V)	80TF	100μ(16V)	80RF	100μ(16V)	81TF	100μ(16V)	81RF	C704 11F
D	NONE	81TD	NONE	81RD	0.033μ(50V)	80TF	0.033μ(50V)	80RF	0.033μ(50V)	81TF	0.033μ(50V)	81RF	C705 10E
D	NONE	81TD	NONE	81RD	100μ(16V)	80TF	100μ(16V)	80RF	100μ(16V)	81TF	100μ(16V)	81RF	C706 10E
D	NONE	81TD	NONE	81RD	0.01μ(50V)	80TF	0.01μ(50V)	80RF	0.01μ(50V)	81TF	0.01μ(50V)	81RF	C707 10E
D	NONE	81TD	NONE	81RD	100P	80TF	100P	80RF					

m-
tical to
tical
on page

(2/2)

OBSERVATION OF VOLTAGES AND WAVEFORMS

1. Voltages read with VTVM from point shown to chassis ground, line voltage 220 volts, colour bar signal. Voltages reading may vary ±20%.
2. All waveforms are taken using a wide band oscilloscope and a low capacity probe.
3. Waveforms are taken using a standard colour bar signal.
4. Make sure that CONTRAST and COLOUR controls are in mid position and BRIGHTNESS control is almost in maximum position. Set other controls for best picture.

NOTES:

1. D.C. resistance value
gram. These are mea
2. The circuits are subje
3. ⊖ : Solder links.

3 4 5 6 7 8

RD	220P	81TD	220P	81RD	220P	80TF	220P	80RF	220P	81TF	220P	81RF	C315 14I
RD	220P	81TD	220P	81RD	220P	80TF	220P	80RF	220P	81TF	220P	81RF	C441 15I
RD	220P	81TD	220P	81RD	220P	80TF	220P	80RF	220P	81TF	220P	81RF	C443 14H
RD	1000P	81TD	1000P	81RD	NONE	80TF	NONE	80RF	1000P	81TF	1000P	81RF	C611 2G
RD	0.01μ	81TD	0.01μ	81RD	NONE	80TF	NONE	80RF	0.01μ	81TF	0.01μ	81RF	C623 10A
RD	NONE	81TD	NONE	81RD	10μ(50V)	80TF	10μ(50V)	80RF	10μ(50V)	81TF	10μ(50V)	81RF	C701 10F
RD	NONE	81TD	NONE	81RD	1μ(50V)	80TF	1μ(50V)	80RF	1μ(50V)	81TF	1μ(50V)	81RF	C702 11F
RD	NONE	81TD	NONE	81RD	0.01μ(50V)	80TF	0.01μ(50V)	80RF	0.01μ(50V)	81TF	0.01μ(50V)	81RF	C703 11F
RD	NONE	81TD	NONE	81RD	100μ(16V)	80TF	100μ(16V)	80RF	100μ(16V)	81TF	100μ(16V)	81RF	C704 11F
RD	NONE	81TD	NONE	81RD	0.033μ(50V)	80TF	0.033μ(50V)	80RF	0.033μ(50V)	81TF	0.033μ(50V)	81RF	C705 10E
RD	NONE	81TD	NONE	81RD	100μ(16V)	80TF	100μ(16V)	80RF	100μ(16V)	81TF	100μ(16V)	81RF	C706 10E
RD	NONE	81TD	NONE	81RD	0.01μ(50V)	80TF	0.01μ(50V)	80RF	0.01μ(50V)	81TF	0.01μ(50V)	81RF	C707 10E
RD	NONE	81TD	NONE	81RD	100P	80TF	100P	80RF	100P	81TF	100P	81RF	C708 11E
RD	NONE	81TD	NONE	81RD	1μ(50V)	80TF	1μ(50V)	80RF	1μ(50V)	81TF	1μ(50V)	81RF	C709 11E
RD	NONE	81TD	NONE	81RD	0.01μ(50V)	80TF	0.01μ(50V)	80RF	0.01μ(50V)	81TF	0.01μ(50V)	81RF	C710 11F
RD	1N4148	81TD	1N4148	81RD	1N4148	80TF	1N4148	80RF	1N4148	81TF	1N4148	81RF	D101 2B
RD	NONE	81TD	NONE	81RD	1N4148	80TF	1N4148	80RF	1N4148	81TF	1N4148	81RF	D102 8A
RD	NONE	81TD	NONE	81RD	1SS110	80TF	1SS110	80RF	1SS110	81TF	1SS110	81RF	D103 2C
RD	NONE	81TD	NONE	81RD	1SS110	80TF	1SS110	80RF	1SS110	81TF	1SS110	81RF	D104 2C
RD	NONE	81TD	NONE	81RD	MTZ2-7B	80TF	MTZ2-7B	80RF	MTZ2-7B	81TF	MTZ2-7B	81RF	D105 7F
RD	NONE	81TD	NONE	81RD	1SS110	80TF	1SS110	80RF	1SS110	81TF	1SS110	81RF	D106 7F
RD	SHORT	81TD	NONE	81RD	NONE	80TF	NONE	80RF	NONE	81TF	NONE	81RF	GJ02 7C
RD	SHORT	81TD	SHORT	81RD	NONE	80TF	NONE	80RF	SHORT	81TF	SHORT	81RF	GJ04 2G
RD	NONE	81TD	NONE	81RD	SHORT	80TF	SHORT	80RF	SHORT	81TF	SHORT	81RF	GJ05 4H
RD	NONE	81TD	NONE	81RD	SHORT	80TF	SHORT	80RF	SHORT	81TF	SHORT	81RF	GJ06 7E
RD	SHORT	81TD	SHORT	81RD	NONE	80TF	NONE	80RF	SHORT	81TF	SHORT	81RF	GJ08 2G
RD	NONE	81TD	NONE	81RD	NONE	80TF	SHORT	80RF	NONE	81TF	SHORT	81RF	GJ12 6D
RD	NONE	81TD	NONE	81RD	SHORT	80TF	SHORT	80RF	SHORT	81TF	SHORT	81RF	GJ15 11F
RD	SHORT	81TD	SHORT	81RD	NONE	80TF	NONE	80RF	NONE	81TF	NONE	81RF	GJ18 10E
RD	NONE	81TD	NONE	81RD	SHORT	80TF	SHORT	80RF	NONE	81TF	NONE	81RF	GJ20 10A
RD	SHORT	81TD	NONE	81RD	SHORT	80TF	NONE	80RF	SHORT	81TF	NONE	81RF	GJ21 2I
RD	SHORT	81TD	NONE	81RD	SHORT	80TF	NONE	80RF	SHORT	81TF	NONE	81RF	GJ22 2I
RD	SHORT	81TD	NONE	81RD	SHORT	80TF	NONE	80RF	SHORT	81TF	NONE	81RF	GJ23 2I
RD	NONE	81TD	SHORT	81RD	NONE	80TF	SHORT	80RF	NONE	81TF	SHORT	81RF	GJ24 2I
RD	NONE	81TD	SHORT	81RD	NONE	80TF	SHORT	80RF	NONE	81TF	SHORT	81RF	GJ25 2I
RD	NONE	81TD	NONE	81RD	SHORT	80TF	SHORT	80RF	SHORT	81TF	SHORT	81RF	GJ27 2I
RD	SHORT	81TD	SHORT	81RD	SHORT	80TF	SHORT	80RF	SHORT	81TF	SHORT	81RF	GJ29 2B
RD	NONE	81TD	NONE	81RD	SHORT	80TF	SHORT	80RF	NONE	81TF	NONE	81RF	GJ31 10A
RD	NONE	81TD	NONE	81RD	SHORT	80TF	SHORT	80RF	SHORT	81TF	SHORT	81RF	GJ32 6F
RD	NONE	81TD	NONE	81RD	SHORT	80TF	SHORT	80RF	SHORT	81TF	SHORT	81RF	GJ33 6F
RD	NONE	81TD	SHORT	81RD	NONE	80TF	SHORT	80RF	NONE	81TF	SHORT	81RF	GJ42 2I
RD	NONE	81TD	NONE	81RD	NONE	80TF	SHORT	80RF	NONE	81TF	SHORT	81RF	GJ44 4H
RD	SHORT	81TD	NONE	81RD	SHORT	80TF	NONE	80RF	SHORT	81TF	NONE	81RF	GJ46 3J
RD	SHORT	81TD	SHORT	81RD	NONE	80TF	NONE	80RF	NONE	81TF	NONE	81RF	GJ47 6D
RD	NONE	81TD	NONE	81RD	1SS110	80TF	1SS110	80RF	1SS110	81TF	1SS110	81RF	G001 8F
RD	P680	81TD	P680	81RD	NONE	80TF	NONE	80RF	P680	81TF	P680	81RF	G002 2F
RD	SHORT	81TD	SHORT	81RD	2.2μ(16V)	80TF	2.2μ(16V)	80RF	2.2μ(16V)	81TF	2.2μ(16V)	81RF	G004 9E
RD	NONE	81TD	NONE	81RD	P100	80TF	P100	80RF	P100	81TF	P100	81RF	G005 2C
RD	NONE	81TD	NONE	81RD	P100	80TF	P100	80RF	P100	81TF	P100	81RF	G006 3C
RD	SHORT	81TD	SHORT	81RD	1SS110	80TF	1SS110	80RF	1SS110	81TF	1SS110	81RF	G008 8F
RD	TEM2011	81TD	TEM2011	81RD	TEM2011	80TF	TEM2011	80RF	TEM2011	81TF	TEM2011	81RF	G009 14J
RD	P68	81TD	P68	81RD	P68	80TF	P68	80RF	P68	81TF	P68	81RF	G010 8A
RD	P100	81TD	P100	81RD	P100	80TF	P100	80RF	P100	81TF	P100	81RF	G011 9F
RD	P47K	81TD	NONE	81RD	P47K	80TF	NONE	80RF	P47K	81TF	NONE	81RF	G017 15G
RD	SHORT	81TD	SHORT	81RD	P12K	80TF	P12K	80RF	P12K	81TF	P12K	81RF	G101 8A
RD	TN-EGA13X2 EGA	81TD	TN-EGA13X2 EGA	81RD	TN-EGA13 VS	80TF	TN-EGA13 VS	80RF	TN-EGA13 VS	81TF	TN-EGA13 VS	81RF	H001 3B
RD	SAA52902P/0E4	81TD	P83C055BBP/192	81RD	SAA52902P/084	80TF	P83C055BBP/192	80RF	SAA52902P/084	81TF	P83C055BBP/192	81RF	ICA013H
RD	NONE	81TD	NONE	81RD	STV8225	80TF	STV8225	80RF	STV8225	81TF	STV8225	81RF	IC1024C
RD	TEM2011	81TD	NONE	81RD	TEM2011	80TF	NONE	80RF	TEM2011	81TF	NONE	81RF	LA04 2J
RD	TEM2011	81TD	NONE	81RD	TEM2011	80TF	NONE	80RF	TEM2011	81TF	NONE	81RF	LA05 2J
RD	NONE	81TD	TRF4330AJ	81RD	NONE	80TF	TRF4330AJ	80RF	NONE	81TF	TRF4330AJ	81RF	LA06 3J
RD	TRF4R68AJ	81TD	TRF4R68AJ	81RD	TRF4R68AJ	80TF	TRF4R68AJ	80RF	TRF4R68AJ	81TF	TRF4R68AJ	81RF	L101 3B
RD	NONE	81TD	NONE	81RD	TRF1019	80TF	TRF1019	80RF	TRF1019	81TF	TRF1019	81RF	L103 2C
RD	NONE	81TD	NONE	81RD	TRF43R3AF	80TF	TRF43R3AF	80RF	TRF43R3AF	81TF	TRF43R3AF	81RF	L104 4D
RD	TRF9220	81TD	TRF9220	81RD	TRF9220	80TF	TRF9220	80RF	TRF9220	81TF	TRF9220	81RF	L105 9A
RD	TRF41004J	81TD	TRF41004J	81RD	TRF4829AJ	80TF	TRF4829AJ	80RF	TRF4829AJ	81TF	TRF4829AJ	81RF	L108 9F
RD	TRF1239AV	81TD	TRF1239AV	81RD	NEW	80TF	NEW	80RF	NEW	81TF	NEW	81RF	L161 9E
RD	NONE	81TD	NONE	81RD	TRF4100AF	80TF	TRF4100AF	80RF	TRF4100AF	81TF	TRF4100AF	81RF	L701 11F
RD	NONE	81TD	NONE	81RD	TRF4100AF	80TF	TRF4100AF	80RF	TRF4100AF	81TF	TRF4100AF	81RF	L702 10E
RD	PHONO JACK 2	81TD	PHONO JACK 2	81RD	NONE	80TF	NONE	80RF	PHONO JACK 2	81TF	PHONO JACK 2	81RF	PH20 1G
RD	EAR JACK 3.5mm	81TD	EAR JACK 3.5mm	81RD	NONE	80TF	NONE	80RF	EAR JACK 3.5mm	81TF	EAR JACK 3.5mm	81RF	P601 10A
RD	POWER CORD	81TD	POWER CORD	81RD	POWER CORD	80TF	POWER CORD	80RF	POWER CORD	81TF	POWER CORD	81RF	P801 8L
RD	NONE	81TD	NONE	81RD	2SC1815-X	80TF	2SC1815-X	80RF	2SC1815-X	81TF	2SC1815-X	81RF	QA09 5H

ORD	TEM2011	81TD	NONE	81RD	TEM2011	80TF	NONE	80RF	TEM2011	81TF	NONE	81RF	LA04 2J
ORD	TEM2011	81TD	NONE	81RD	TEM2011	80TF	NONE	80RF	TEM2011	81TF	NONE	81RF	LA05 2J
ORD	NONE	81TD	TRF4330AJ	81RD	NONE	80TF	TRF4330AJ	80RF	NONE	81TF	TRF4330AJ	81RF	LA06 3J
ORD	TRF4R68AJ	81TD	TRF4R68AJ	81RD	TRF4R68AJ	80TF	TRF4R68AJ	80RF	TRF4R68AJ	81TF	TRF4R68AJ	81RF	L101 3B
ORD	NONE	81TD	NONE	81RD	TRF1019	80TF	TRF1019	80RF	TRF1019	81TF	TRF1019	81RF	L103 2C
ORD	NONE	81TD	NONE	81RD	TRF43R3AF	80TF	TRF43R3AF	80RF	TRF43R3AF	81TF	TRF43R3AF	81RF	L104 4D
ORD	TRF9220	81TD	TRF9220	81RD	TRF9220	80TF	TRF9220	80RF	TRF9220	81TF	TRF9220	81RF	L105 9A
ORD	TRF41004J	81TD	TRF41004J	81RD	TRF4829AJ	80TF	TRF4829AJ	80RF	TRF4829AJ	81TF	TRF4829AJ	81RF	L108 9F
ORD	TRF1239AV	81TD	TRF1239AV	81RD	NEW	80TF	NEW	80RF	NEW	81TF	NEW	81RF	L161 9E
ORD	NONE	81TD	NONE	81RD	TRF4100AF	80TF	TRF4100AF	80RF	TRF4100AF	81TF	TRF4100AF	81RF	L701 11F
ORD	NONE	81TD	NONE	81RD	TRF4100AF	80TF	TRF4100AF	80RF	TRF4100AF	81TF	TRF4100AF	81RF	L702 10E
ORD	PHONO JACK 2	81TD	PHONO JACK 2	81RD	NONE	80TF	NONE	80RF	PHONO JACK 2	81TF	PHONO JACK 2	81RF	PH20 1G
ORD	EAR JACK 3.5mm	81TD	EAR JACK 3.5mm	81RD	NONE	80TF	NONE	80RF	EAR JACK 3.5mm	81TF	EAR JACK 3.5mm	81RF	P601 10A
ORD	POWER CORD	81TD	POWER CORD	81RD	POWER CORD	80TF	POWER CORD	80RF	POWER CORD	81TF	POWER CORD	81RF	P801 8L
ORD	NONE	81TD	NONE	81RD	2SC1815-Y	80TF	2SC1815-Y	80RF	2SC1815-Y	81TF	2SC1815-Y	81RF	QA09 5H
ORD	NONE	81TD	NONE	81RD	RN1203	80TF	NONE	80RF	RN1203	81TF	NONE	81RF	QA13 5H
ORD	LA7910	81TD	LA7910	81RD	LA7910	80TF	LA7910	80RF	LA7910	81TF	LA7910	81RF	Q103 2B
ORD	NONE	81TD	NONE	81RD	2SC388ATM	80TF	SSC388ATM	80RF	2SC388ATM	81TF	SSC388ATM	81RF	Q104 2D
ORD	NONE	81TD	NONE	81RD	RN1206	80TF	RN1206	80RF	RN1206	81TF	RN1206	81RF	Q108 6F
ORD	NONE	81TD	NONE	81RD	RN1206	80TF	RN1206	80RF	RN1206	81TF	RN1206	81RF	Q109 6F
ORD	2SC1815-Y	81TD	NONE	81RD	2SC1815-Y	80TF	NONE	80RF	2SC1815-Y	81TF	NONE	81RF	Q212 13E
ORD	2SC1815-Y	81TD	NONE	81RD	2SC1815-Y	80TF	NONE	80RF	2SC1815-Y	81TF	NONE	81RF	Q302 15G
ORD	TB1231N	81TD	TB1231N	81RD	TB1238N	80TF	TB1238N	80RF	TB1238N	81TF	TB1238N	81RF	Q501 8D
ORD	NONE	81TD	NONE	81RD	TA1275AZ	80TF	TA1275AZ	80RF	TA1275AZ	81TF	TA1275AZ	81RF	Q560 10F
ORD	NONE	81TD	NONE	81RD	RN1203	80TF	NONE	80RF	RN1203	81TF	NONE	81RF	Q602 6D
ORD	NONE	81TD	NONE	81RD	RN1203	80TF	RN1203	80RF	RN1203	81TF	RN1203	81RF	Q614 7D
ORD	P1K	81TD	NONE	81RD	P1K	80TF	NONE	80RF	P1K	81TF	NONE	81RF	RA10 3K
ORD	P1.8K	81TD	NONE	81RD	P1.8K	80TF	NONE	80RF	P1.8K	81TF	NONE	81RF	RA11 3J
ORD	NONE	81TD	NONE	81RD	P470	80TF	P470	80RF	P470	81TF	P470	81RF	RA13 6F
ORD	NONE	81TD	NONE	81RD	P10K	80TF	P10K	80RF	P10K	81TF	P10K	81RF	RA18 5H
ORD	P27K	81TD	NONE	81RD	P27K	80TF	NONE	80RF	P27K	81TF	NONE	81RF	RA37 4K
ORD	P1K	81TD	NONE	81RD	P1K	80TF	NONE	80RF	P1K	81TF	NONE	81RF	RA40 3J
ORD	P22K	81TD	P22K	81RD	P10K	80TF	NONE	80RF	P10K	81TF	NONE	81RF	RA62 4H
ORD	NONE	81TD	NONE	81RD	P12K	80TF	P12K	80RF	P12K	81TF	P12K	81RF	RA79 5D
ORD	P33K	81TD	P33K	81RD	P33K	80TF	P33K	80RF	P33K	81TF	P33K	81RF	R001 4I
ORD	P7.5K	81TD	P7.5K	81RD	P27K	80TF	P27K	80RF	P27K	81TF	P27K	81RF	R002 4I
ORD	P1K	81TD	P1K	81RD	P1K	80TF	P1K	80RF	P1K	81TF	P1K	81RF	R107 2B
ORD	P1K	81TD	P1K	81RD	P1K	80TF	P1K	80RF	P1K	81TF	P1K	81RF	R120 2B
ORD	P3.9K	81TD	P3.9K	81RD	P3.9K	80TF	P3.9K	80RF	P3.9K	81TF	P3.9K	81RF	R121 2B
ORD	NONE	81TD	NONE	81RD	P1K	80TF	P1K	80RF	P1K	81TF	P1K	81RF	R125 2D
ORD	NONE	81TD	NONE	81RD	P5.6K	80TF	P5.6K	80RF	P5.6K	81TF	P5.6K	81RF	R126 2C
ORD	NONE	81TD	NONE	81RD	P1K	80TF	P1K	80RF	P1K	81TF	P1K	81RF	R127 2C
ORD	NONE	81TD	NONE	81RD	P36	80TF	P36	80RF	P36	81TF	P36	81RF	R128 2D
ORD	NONE	81TD	NONE	81RD	P4.7K	80TF	P4.7K	80RF	P4.7K	81TF	P4.7K	81RF	R129 2C
ORD	NONE	81TD	NONE	81RD	P2.2K	80TF	P2.2K	80RF	P2.2K	81TF	P2.2K	81RF	R131 2C
ORD	NONE	81TD	NONE	81RD	P2.2K	80TF	P2.2K	80RF	P2.2K	81TF	P2.2K	81RF	R133 3C
ORD	NONE	81TD	NONE	81RD	P3.3K	80TF	P3.3K	80RF	P3.3K	81TF	P3.3K	81RF	R164 7F
ORD	NONE	81TD	NONE	81RD	P5.1K	80TF	P5.1K	80RF	P5.1K	81TF	P5.1K	81RF	R165 7F
ORD	NONE	81TD	NONE	81RD	P3.3K	80TF	P3.3K	80RF	P3.3K	81TF	P3.3K	81RF	R166 7F
ORD	NONE	81TD	NONE	81RD	P100	80TF	P100	80RF	P100	81TF	P100	81RF	R167 7F
ORD	NONE	81TD	NONE	81RD	P1K	80TF	P1K	80RF	P1K	81TF	P1K	81RF	R168 7F
ORD	NONE	81TD	NONE	81RD	P1K	80TF	P1K	80RF	P1K	81TF	P1K	81RF	R169 6F
ORD	NONE	81TD	NONE	81RD	P18K	80TF	P18K	80RF	P18K	81TF	P18K	81RF	R170 6F
ORD	NONE	81TD	NONE	81RD	P100	80TF	P100	80RF	P100	81TF	P100	81RF	R172 8F
ORD	P270	81TD	P270	81RD	P270	80TF	P270	80RF	P270	81TF	P270	81RF	R173 8F
ORD	NONE	81TD	NONE	81RD	P470	80TF	P470	80RF	P470	81TF	P470	81RF	R175 8F
ORD	NONE	81TD	NONE	81RD	P100	80TF	P100	80RF	P100	81TF	P100	81RF	R177 8F
ORD	P56	81TD	P56	81RD	P56	80TF	P56	80RF	P56	81TF	P56	81RF	R181 9F
ORD	P750	81TD	NONE	81RD	P750	80TF	NONE	80RF	P750	81TF	NONE	81RF	R204 13E
ORD	P1K	81TD	NONE	81RD	P1K	80TF	NONE	80RF	P1K	81TF	NONE	81RF	R220 13E
ORD	P1K	81TD	NONE	81RD	P1K	80TF	NONE	80RF	P1K	81TF	NONE	81RF	R225 13E
ORD	P6.2K	81TD	NONE	81RD	P6.2K	80TF	NONE	80RF	P6.2K	81TF	NONE	81RF	R360 15G
ORD	P10K	81TD	NONE	81RD	P10K	80TF	NONE	80RF	P10K	81TF	NONE	81RF	R580 4I
ORD	1/2R330	81TD	1/2R330	81RD	NONE	80TF	NONE	80RF	1/2R330	81TF	1/2R330	81RF	R605 10A
ORD	NONE	81TD	NONE	81RD	P220	80TF	P220	80RF	P220	81TF	P220	81RF	R606 7C
ORD	NONE	81TD	NONE	81RD	P27K	80TF	NONE	80RF	P27K	81TF	NONE	81RF	R609 6D
ORD	P5.6K	81TD	P5.6K	81RD	NONE	80TF	NONE	80RF	P5.6K	81TF	P5.6K	81RF	R614 2G
ORD	NONE	81TD	NONE	81RD	P10K	80TF	P10K	80RF	P10K	81TF	P10K	81RF	R632 7D
ORD	NONE	81TD	NONE	81RD	P9.1K	80TF	P9.1K	80RF	P9.1K	81TF	P9.1K	81RF	R633 7D
ORD	NONE	81TD	NONE	81RD	P6.2K	80TF	P6.2K	80RF	P6.2K	81TF	P6.2K	81RF	R706 11E
ORD	NONE	81TD	NONE	81RD	P47K	80TF	P47K	80RF	P47K	81TF	P47K	81RF	R707 11F
ORD	NONE	81TD	NONE	81RD	P9.1K	80TF	P9.1K	80RF	P9.1K	81TF	P9.1K	81RF	R708 11E
ORD	NONE	81TD	NONE	81RD	OFWL9453M	80TF	OFWL9453M	80RF	OFWL9453M	81TF	OFWL9453M	81RF	Z101 3C

NOTES:

1. D.C. resistance value of a principal transformer is shown in this schematic diagram. These are measured for separated from the circuit.
2. The circuits are subject to change without notice.
3. ◐ : Solder links.

EXPRESSION

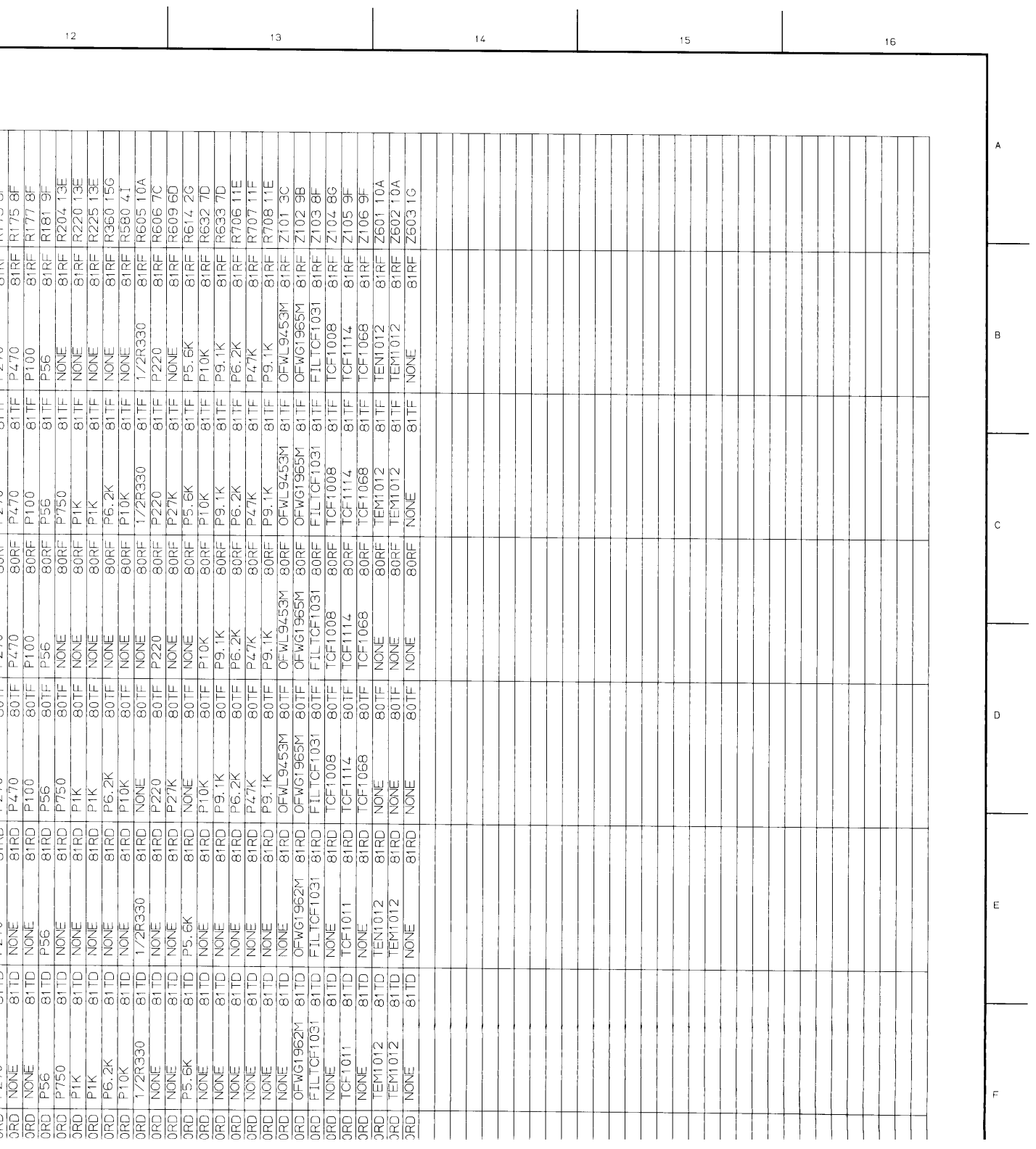
VALUE OF RESISTOR, CAPACITOR

1. Resistance is shown in ohm, k=1,000,
2. Unless other wise noted in schematic, sed in μF and the values more than 1 i
3. Unless otherwise noted in schematic, sed in μH, and the values less than 1 in

XPRESSION

ALUE OF RESISTOR, CAPACITOR and INDUCTOR

Resistance is shown in ohm, k=1,000, M=1,000,000
Unless other wise noted in schematic, all capacitor values less than 1 are expressed in μF and the values more than 1 in pF.
Unless otherwise noted in schematic, all inductor values more than 1 are expressed in μH, and the values less than 1 in H.



LOCATION	2181TB/W		2181RB/W		2180TB/W		2180RB/W		2181TD		2181RD		2180TD		2180RD	
CA22	0.1μ(50V)	80TB	NONE	80RB	0.1μ(50V)	81TB	NONE	81RB	0.1μ(50V)	80TD	NONE	80RD	0.1μ(50V)	81TD	NONE	8
CA24	0.1μ(50V)	80TB	NONE	80RB	0.1μ(50V)	81TB	NONE	81RB	0.1μ(50V)	80TD	NONE	80RD	0.1μ(50V)	81TD	NONE	8
CA44	47μ(16V)	80TB	NONE	80RB	47μ(16V)	81TB	NONE	81RB	47μ(16V)	80TD	NONE	80RD	47μ(16V)	81TD	NONE	8
CA47	0.01μ(50V)	80TB	39P	80RB	0.01μ(50V)	81TB	39P	81RB	0.01μ(50V)	80TD	39P	80RD	0.01μ(50V)	81TD	39P	8
CA48	0.01μ(50V)	80TB	39P	80RB	0.01μ(50V)	81TB	39P	81RB	0.01μ(50V)	80TD	39P	80RD	0.01μ(50V)	81TD	39P	8
C101	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	0.01μ	80TD	0.01μ	80RD	0.01μ	81TD	0.01μ	8
C103	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	0.01μ	80TD	0.01μ	80RD	0.01μ	81TD	0.01μ	8
C105	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	0.01μ	80TD	0.01μ	80RD	0.01μ	81TD	0.01μ	8
C108	47μ(16V)	80TB	47μ(16V)	80RB	47μ(16V)	81TB	47μ(16V)	81RB	47μ(16V)	80TD	47μ(16V)	80RD	47μ(16V)	81TD	47μ(16V)	8
C113	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C114	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C115	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C118	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C119	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C120	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C121	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C122	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C123	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C128	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C129	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C146	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C148	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C149	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C152	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C160	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C165	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	2200μ(16V)	80TD	2200μ(16V)	80RD	2200μ(16V)	81TD	2200μ(16V)	8
C225	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C226	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C315	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	220P	80TD	220P	80RD	220P	81TD	220P	8
C441	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	220P	80TD	220P	80RD	220P	81TD	220P	8
C443	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	220P	80TD	220P	80RD	220P	81TD	220P	8
C611	NONE	80TB	NONE	80RB	1000P	81TB	1000P	81RB	NONE	80TD	NONE	80RD	1000P	81TD	1000P	8
C623	NONE	80TB	NONE	80RB	0.01μ	81TB	0.01μ	81RB	NONE	80TD	NONE	80RD	0.01μ	81TD	0.01μ	8
C701	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C702	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C703	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C704	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C705	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C706	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8
C707	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	8

C315	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	220P	80TD	220P	80RD	220P	81TD	220P	
C441	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	220P	80TD	220P	80RD	220P	81TD	220P	
C443	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	220P	80TD	220P	80RD	220P	81TD	220P	
C611	NONE	80TB	NONE	80RB	1000P	81TB	1000P	81RB	NONE	80TD	NONE	80RD	1000P	81TD	1000P	
C623	NONE	80TB	NONE	80RB	0.01μ	81TB	0.01μ	81RB	NONE	80TD	NONE	80RD	0.01μ	81TD	0.01μ	
C701	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
C702	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
C703	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
C704	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
C705	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
C706	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
C707	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
C708	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
C709	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
C710	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
D101	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	1N4148	80TD	1N4148	80RD	1N4148	81TD	1N4148	
D102	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
D103	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
D104	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
D105	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
D106	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
GJ02	SHORT	80TB	SHORT	80RB	SHORT	81TB	SHORT	81RB	SHORT	80TD	SHORT	80RD	SHORT	81TD	NONE	
GJ04	NONE	80TB	NONE	80RB	SHORT	81TB	SHORT	81RB	NONE	80TD	NONE	80RD	SHORT	81TD	SHORT	
GJ05	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
GJ06	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
GJ08	NONE	80TB	NONE	80RB	SHORT	81TB	SHORT	81RB	NONE	80TD	NONE	80RD	SHORT	81TD	SHORT	
GJ12	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
GJ15	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
GJ18	SHORT	80TB	SHORT	80RB	SHORT	81TB	SHORT	81RB	SHORT	80TD	SHORT	80RD	SHORT	81TD	SHORT	
GJ20	SHORT	80TB	SHORT	80RB	NONE	81TB	NONE	81RB	SHORT	80TD	SHORT	80RD	NONE	81TD	NONE	
GJ21	SHORT	80TB	NONE	80RB	SHORT	81TB	NONE	81RB	SHORT	80TD	NONE	80RD	SHORT	81TD	NONE	
GJ22	SHORT	80TB	NONE	80RB	SHORT	81TB	NONE	81RB	SHORT	80TD	NONE	80RD	SHORT	81TD	NONE	
GJ23	SHORT	80TB	NONE	80RB	SHORT	81TB	NONE	81RB	SHORT	80TD	NONE	80RD	SHORT	81TD	NONE	
GJ24	NONE	80TB	SHORT	80RB	NONE	81TB	SHORT	81RB	NONE	80TD	SHORT	80RD	NONE	81TD	SHORT	
GJ25	NONE	80TB	SHORT	80RB	NONE	81TB	SHORT	81RB	NONE	80TD	SHORT	80RD	NONE	81TD	SHORT	
GJ27	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
GJ29	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	SHORT	80TD	SHORT	80RD	SHORT	81TD	SHORT	
GJ31	SHORT	80TB	SHORT	80RB	NONE	81TB	NONE	81RB	SHORT	80TD	SHORT	80RD	NONE	81TD	NONE	
GJ32	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
GJ33	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
GJ42	NONE	80TB	SHORT	80RB	NONE	81TB	SHORT	81RB	NONE	80TD	SHORT	80RD	NONE	81TD	SHORT	
GJ44	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
GJ46	SHORT	80TB	NONE	80RB	SHORT	81TB	NONE	81RB	SHORT	80TD	NONE	80RD	SHORT	81TD	NONE	
GJ47	SHORT	80TB	SHORT	80RB	SHORT	81TB	SHORT	81RB	SHORT	80TD	SHORT	80RD	SHORT	81TD	SHORT	
G001	SHORT	80TB	SHORT	80RB	SHORT	81TB	SHORT	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
G002	NONE	80TB	NONE	80RB	P680	81TB	P680	81RB	NONE	80TD	NONE	80RD	P680	81TD	P680	
G004	SHORT	80TB	SHORT	80RB	SHORT	81TB	SHORT	81RB	SHORT	80TD	SHORT	80RD	SHORT	81TD	SHORT	
G005	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
G006	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
G008	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	SHORT	80TD	SHORT	80RD	SHORT	81TD	SHORT	
G009	SHORT	80TB	SHORT	80RB	SHORT	81TB	SHORT	81RB	TEM2011	80TD	TEM2011	80RD	TEM2011	81TD	TEM2011	
G010	SHORT	80TB	SHORT	80RB	SHORT	81TB	SHORT	81RB	P68	80TD	P68	80RD	P68	81TD	P68	
G011	SHORT	80TB	SHORT	80RB	SHORT	81TB	SHORT	81RB	P100	80TD	P100	80RD	P100	81TD	P100	
G017	P47K	80TB	NONE	80RB	P47K	81TB	NONE	81RB	P47K	80TD	NONE	80RD	P47K	81TD	NONE	
G101	SHORT	80TB	SHORT	80RB	SHORT	81TB	SHORT	81RB	SHORT	80TD	SHORT	80RD	SHORT	81TD	SHORT	
H001	TN-UF813BX1	80TB	TN-UF813BX1	80RB	TN-UF813BX1	81TB	TN-UF813BX1	81RB	TN-EGA13X2 EGA	80TD	TN-EGA13X2 EGA	80RD	TN-EGA13X2 EGA	81TD	TN-EGA13X2 EGA	
ICA01	SAA52902P/084	80TB	P83C055BBP/192	80RB	SAA52902P/084	81TB	P83C055BBP/192	81RB	SAA52902P/084	80TD	P83C055BBP/192	80RD	SAA52902P/084	81TD	P83C055BBP/192	
IC102	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
LA04	TEM2011	80TB	NONE	80RB	TEM2011	81TB	NONE	81RB	TEM2011	80TD	NONE	80RD	TEM2011	81TD	NONE	
LA05	TEM2011	80TB	NONE	80RB	TEM2011	81TB	NONE	81RB	TEM2011	80TD	NONE	80RD	TEM2011	81TD	NONE	
LA06	NONE	80TB	TRF4330AJ	80RB	NONE	81TB	TRF4330AJ	81RB	NONE	80TD	TRF4330AJ	80RD	NONE	81TD	TRF4330AJ	
L101	TRF4R47AJ	80TB	TRF4R47AJ	80RB	TRF4R47AJ	81TB	TRF4R47AJ	81RB	TRF4R68AJ	80TD	TRF4R68AJ	80RD	TRF4R68AJ	81TD	TRF4R68AJ	
L103	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
L104	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
L105	TRF9221	80TB	TRF9221	80RB	TRF9221	81TB	TRF9221	81RB	TRF9220	80TD	TRF9220	80RD	TRF9220	81TD	TRF9220	
L108	TRF41004J	80TB	TRF41004J	80RB	TRF41004J	81TB	TRF41004J	81RB	TRF41004J	80TD	TRF41004J	80RD	TRF41004J	81TD	TRF41004J	
L161	TRF1239AV	80TB	TRF1239AV	80RB	TRF1239AV	81TB	TRF1239AV	81RB	TRF1239AV	80TD	TRF1239AV	80RD	TRF1239AV	81TD	TRF1239AV	
L701	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
L702	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
PH20	NONE	80TB	NONE	80RB	PHONO JACK 2	81TB	PHONO JACK 2	81RB	NONE	80TD	NONE	80RD	PHONO JACK 2	81TD	PHONO JACK 2	
P601	NONE	80TB	NONE	80RB	EAR JACK 3.5mm	81TB	EAR JACK 3.5mm	81RB	NONE	80TD	NONE	80RD	EAR JACK 3.5mm	81TD	EAR JACK 3.5mm	
P801	POWER CORD	80TB	POWER CORD	80RB	POWER CORD	81TB	POWER CORD	81RB	POWER CORD	80TD	POWER CORD	80RD	POWER CORD	81TD	POWER CORD	
QA09	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	

LA04	TEM2011	80TB	NONE	80RB	TEM2011	81TB	NONE	81RB	TEM2011	80TD	NONE	80RD	TEM2011	81TD	NONE
LA05	TEM2011	80TB	NONE	80RB	TEM2011	81TB	NONE	81RB	TEM2011	80TD	NONE	80RD	TEM2011	81TD	NONE
LA06	NONE	80TB	TRF4330AJ	80RB	NONE	81TB	TRF4330AJ	81RB	NONE	80TD	TRF4330AJ	80RD	NONE	81TD	TRF4330AJ
L101	TRF4R47AJ	80TB	TRF4R47AJ	80RB	TRF4R47AJ	81TB	TRF4R47AJ	81RB	TRF4R68AJ	80TD	TRF4R68AJ	80RD	TRF4R68AJ	81TD	TRF4R68AJ
L103	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
L104	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
L105	TRF9221	80TB	TRF9221	80RB	TRF9221	81TB	TRF9221	81RB	TRF9220	80TD	TRF9220	80RD	TRF9220	81TD	TRF9220
L108	TRF41004J	80TB	TRF41004J	80RB	TRF41004J	81TB	TRF41004J	81RB	TRF41004J	80TD	TRF41004J	80RD	TRF41004J	81TD	TRF41004J
L161	TRF1239AV	80TB	TRF1239AV	80RB	TRF1239AV	81TB	TRF1239AV	81RB	TRF1239AV	80TD	TRF1239AV	80RD	TRF1239AV	81TD	TRF1239AV
L701	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
L702	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
PH20	NONE	80TB	NONE	80RB	PHONO JACK 2	81TB	PHONO JACK 2	81RB	NONE	80TD	NONE	80RD	PHONO JACK 2	81TD	PHONO JACK 2
P601	NONE	80TB	NONE	80RB	EAR JACK 3.5mm	81TB	EAR JACK 3.5mm	81RB	NONE	80TD	NONE	80RD	EAR JACK 3.5mm	81TD	EAR JACK 3.5mm
P801	POWER CORD	80TB	POWER CORD	80RB	POWER CORD	81TB	POWER CORD	81RB	POWER CORD	80TD	POWER CORD	80RD	POWER CORD	81TD	POWER CORD
QA09	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
QA13	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
Q103	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	LA7910	80TD	LA7910	80RD	LA7910	81TD	LA7910
Q104	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
Q108	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
Q109	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
Q212	2SC1815-Y	80TB	NONE	80RB	2SC1815-Y	81TB	NONE	81RB	2SC1815-Y	80TD	NONE	80RD	2SC1815-Y	81TD	NONE
Q302	2SC1815-Y	80TB	NONE	80RB	2SC1815-Y	81TB	NONE	81RB	2SC1815-Y	80TD	NONE	80RD	2SC1815-Y	81TD	NONE
Q501	TB1231N	80TB	TB1231N	80RB	TB1231N	81TB	TB1231N	81RB	TB1231N	80TD	TB1231N	80RD	TB1231N	81TD	TB1231N
Q560	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
Q602	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
Q614	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
RA10	P1K	80TB	NONE	80RB	P1K	81TB	NONE	81RB	P1K	80TD	NONE	80RD	P1K	81TD	NONE
RA11	P1.8K	80TB	NONE	80RB	P1.8K	81TB	NONE	81RB	P1.8K	80TD	NONE	80RD	P1.8K	81TD	NONE
RA13	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
RA18	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
RA37	P27K	80TB	NONE	80RB	P27K	81TB	NONE	81RB	P27K	80TD	NONE	80RD	P27K	81TD	NONE
RA40	P1K	80TB	NONE	80RB	P1K	81TB	NONE	81RB	P1K	80TD	NONE	80RD	P1K	81TD	NONE
RA62	P22K	80TB	P22K	80RB	P22K	81TB	P22K	81RB	P22K	80TD	P22K	80RD	P22K	81TD	P22K
RA79	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R001	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	P33K	80TD	P33K	80RD	P33K	81TD	P33K
R002	P1K	80TB	P1K	80RB	P1K	81TB	P1K	81RB	P7.5K	80TD	P7.5K	80RD	P7.5K	81TD	P7.5K
R107	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	P1K	80TD	P1K	80RD	P1K	81TD	P1K
R120	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	P1K	80TD	P1K	80RD	P1K	81TD	P1K
R121	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	P3.9K	80TD	P3.9K	80RD	P3.9K	81TD	P3.9K
R125	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R126	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R127	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R128	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R129	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R131	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R133	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R164	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R165	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R166	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R167	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R168	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R169	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R170	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R172	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R173	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	P270	80TD	P270	80RD	P270	81TD	P270
R175	P470	80TB	P470	80RB	P470	81TB	P470	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R177	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R181	P220	80TB	P220	80RB	P220	81TB	P220	81RB	P56	80TD	P56	80RD	P56	81TD	P56
R204	P750	80TB	NONE	80RB	P750	81TB	NONE	81RB	P750	80TD	NONE	80RD	P750	81TD	NONE
R220	P1K	80TB	NONE	80RB	P1K	81TB	NONE	81RB	P1K	80TD	NONE	80RD	P1K	81TD	NONE
R225	P1K	80TB	NONE	80RB	P1K	81TB	NONE	81RB	P1K	80TD	NONE	80RD	P1K	81TD	NONE
R360	P6.2K	80TB	NONE	80RB	P6.2K	81TB	NONE	81RB	P6.2K	80TD	NONE	80RD	P6.2K	81TD	NONE
R580	P10K	80TB	NONE	80RB	P10K	81TB	NONE	81RB	P10K	80TD	NONE	80RD	P10K	81TD	NONE
R605	NONE	80TB	NONE	80RB	1/2R330	81TB	1/2R330	81RB	NONE	80TD	NONE	80RD	1/2R330	81TD	1/2R330
R606	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R609	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R614	NONE	80TB	NONE	80RB	P5.6K	81TB	P5.6K	81RB	NONE	80TD	NONE	80RD	P5.6K	81TD	P5.6K
R632	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R633	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R706	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R707	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
R708	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE
Z101	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE

R181	P220	80TB	P220	80RB	P220	81TB	P220	81RB	P56	80TD	P56	80RD	P56	81TD	P56	
R204	P750	80TB	NONE	80RB	P750	81TB	NONE	81RB	P750	80TD	NONE	80RD	P750	81TD	NONE	
R220	P1K	80TB	NONE	80RB	P1K	81TB	NONE	81RB	P1K	80TD	NONE	80RD	P1K	81TD	NONE	
R225	P1K	80TB	NONE	80RB	P1K	81TB	NONE	81RB	P1K	80TD	NONE	80RD	P1K	81TD	NONE	
R360	P6.2K	80TB	NONE	80RB	P6.2K	81TB	NONE	81RB	P6.2K	80TD	NONE	80RD	P6.2K	81TD	NONE	
R580	P10K	80TB	NONE	80RB	P10K	81TB	NONE	81RB	P10K	80TD	NONE	80RD	P10K	81TD	NONE	
R605	NONE	80TB	NONE	80RB	1/2R330	81TB	1/2R330	81RB	NONE	80TD	NONE	80RD	1/2R330	81TD	1/2R330	
R606	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
R609	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
R614	NONE	80TB	NONE	80RB	P5.6K	81TB	P5.6K	81RB	NONE	80TD	NONE	80RD	P5.6K	81TD	P5.6K	
R632	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
R633	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
R706	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
R707	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
R708	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
Z101	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
Z102	OFWJ1951M	80TB	OFWJ1951M	80RB	OFWJ1951M	81TB	OFWJ1951M	81RB	OFWG1962M	80TD	OFWG1962M	80RD	OFWG1962M	81TD	OFWG1962M	
Z103	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	FILTCF1031	80TD	FILTCF1031	80RD	FILTCF1031	81TD	FILTCF1031	
Z104	SFE6.0MB	80TB	SFE6.0MB	80RB	SFE6.0MB	81TB	SFE6.0MB	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
Z105	TCF1012	80TB	TCF1012	80RB	TCF1012	81TB	TCF1012	81RB	TCF1011	80TD	TCF1011	80RD	TCF1011	81TD	TCF1011	
Z106	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	
Z601	NONE	80TB	NONE	80RB	TEM1012	81TB	TEN1012	81RB	NONE	80TD	NONE	80RD	TEM1012	81TD	TEN1012	
Z602	NONE	80TB	NONE	80RB	TEM1012	81TB	TEM1012	81RB	NONE	80TD	NONE	80RD	TEM1012	81TD	TEM1012	
Z603	NONE	80TB	NONE	80RB	NONE	81TB	NONE	81RB	NONE	80TD	NONE	80RD	NONE	81TD	NONE	